Gleanings in Bee Culture

VOL XXXIX MAY 15, 1911 NO. 10

The Rain Song

It isn't raining rain to me,
  It's raining daffodils;
In every dimpled drop I see
  Wild flowers on the hills.
The clouds of gray engulf the day,
  And overwhelm the town;
It isn't raining rain to me,
  It's raining roses down.

It isn't raining rain to me,
  But fields of clover bloom,
Where every bucaneering bee
  May find a bed and room;
A health unto the happy!
  A fig for him who frets!
It isn't raining rain to me,
  It's raining violets. —*Robert Loveman*

Courtesy of *The Farm and Fireside*

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OUR MANAGER at the Chicago branch is an experienced bee-keeper who thoroughly understands the requirements of those engaged in this business, either for profit or pleasure. He has been identified with the **Root Line** for some twenty years, and has both the knowledge and desire to make his services of value to whoever seek his assistance.

THE A. I. ROOT COMPANY,

213-231 Institute Place, Chicago, Illinois.

R. W. BOYDEN, Mgr. :-: **Tel. 1484 North.**

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Published by The A. I. Root Co., Medina, Ohio.

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A. I. ROOT, Editor Home Department
E. R. ROOT, Editor
A. L. BOYDEN, Advertising Manager
J. T. CALVERT, Business Manager

Entered at the Postoffice, Medina, Ohio, as Second-class Matter

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Editorial

STRAY STRAWS arrived too late for this issue.

THE HOUSE SERIES OF ARTICLES.

SEVERAL of the York Staters are asking why the S. D. House series of moving pictures, illustrating his methods of comb-honey production, have not been forthcoming. In the the first place, Mr. House has been sick; and in the second place, our columns have been crowded with two other moving-picture series. The House articles will begin with our next issue.

A FEW TRICKS OF THE TRADE IN OUR SERIES OF MOVING-PICTURE ARTICLES.

PARTICULAR attention is called to the method used by E. D. Townsend for getting bees off the combs for the purpose of extracting—see page 303. We have seen Mr. Townsend do this stunt. It certainly works. Try it.

And while you are about it, do not forget to see the very valuable moving-picture series by O. B. Metcalfe. Beginners and veterans should read both articles, as they are full of little tricks of the trade.

A BACKWARD SPRING; COLONIES WEAK AND A SCARCITY OF BROOD.

IN a recent trip through Central New York we found conditions there very satisfactory for a clover and basswood flow this coming season. It has been a backward spring for most of the Northern States. Clover, from the general information that has come to this office, will be a month late. While our bees are backward for this time of year—that is, lacking the necessary force of bees and brood—yet, assuming that they have probably a month yet in which to make up lost time, they will be ready for the clover flow when it does come.

MORE OUT-APIARIES AND FEWER BEES TO THE YARD.

WE find this spring that our Clark yard is storing honey, and making preparations to swarm while the home yard is barely holding its own. The Clark bees have been gathering honey from the hard maples; and now that fruit-bloom is just opening up, there will be something doing in that yard unless we look out. We have decided on the policy of scattering our bees in more yards.

One reason why the home yard has not done better is because it is overstocked, and because it is flanked on one side by a town of 3000 inhabitants, the area of which furnishes practically no nectar. The Clark yard, on the other hand, is located four miles from town and about a quarter of a mile from woods of hard maple on all sides.

It will certainly be a good policy for some bee-keepers to have more apiaries and less bees in each apiary. Where there is one yard that will support 200 colonies there are ten that will not support more than 50.

MORTALITY AMONG BEES IN SOUTHERN CALIFORNIA FROM 50 TO 80 PER CENT.

THE following letter, received from one of our correspondents in Redlands, Cal., will explain itself. It would seem from this, that if this condition is at all general there will not be a large crop of mountain sage:

> Believing conditions throughout the country should be reported through the columns of our leading bee-journals I wish to report for this district of California. What the conditions are elsewhere in this State I can not say; but here they are most deplorable, the mortality rate being not less than 50 per cent on an average, some apiaries going as high as 80 per cent. The oranges are in full bloom, with few bees to handle the immense flow that is on; the sage also is beginning to yield.
>
> It is generally conceded to be the result of a long dry summer and fall, with no breeding to keep up the stock of young bees, and the old stock dying before breeding could overcome the loss.
>
> Many colonies have died with quantities of stores, others from lack of stores when extracting was followed too closely and too late in the season.
>
> Redlands, Cal., April 25. P. C. CHADWICK.

We shall be glad to hear from any of our other California readers. Write at once, telling us of the conditions. If there is going to be a scarcity of California mountain sage, let us know at once.

It will not do any good to make conditions any worse than they are; for when the facts are actually known, the market will take such a slump that it will go below what it would have done had the facts been correctly stated in the first place. The honey market has come to be so sensitive that a false alarm does untold damage. While the price may be boosted temporarily, yet when the honey actually begins to pour into the Eastern market there is bound to be a fearful slump. If, on the other hand, the market is prepared in advance, it will adjust itself accordingly.

We have every reason to believe that Mr. Chadwick, our correspondent above, has given a true statement of the conditions as they actually exist in his locality.

HEAVIER AND STRONGER COMB HONEY SHIPPING-CASES WITH MORE CORRUGATED PAPER.

A LARGER shipping-case, with heavier ends to nail to, and large enough in dimensions to take in a sheet of corrugated paper, top and bottom, and cross-partitions of this material, or better, perhaps, cartons for each individual section, will cost only 8 cents more than the present standard shipping-cases of 24 lbs. capacity. If such a shipping-case will save only one section out of the entire 24, it will pay for itself, and leave 5 to 10 cents per case to spare to apply on more shipping-cases, or deposit that amount in the bank as a savings account. But carefully prepared statistics covering some large shipments of honey show, however, that the present breakage and leakage amount to about 20 per cent. At a wholesale rate of 15 cts. per lb., and counting the broken honey worth half price, this would mean to the producer an actual saving of 35 cts. for a 24-lb. case, or, on a crop of 10,000 lbs. it would mean a saving of $145.95, or enough to buy shipping-cases for another crop of 10,000 lbs. Why, then, should we bee-keepers continue the antiquated way of shipping our fancy product (fragile if any thing is fragile) in light shipping-cases, when the breakage amounts to so large an item?

As a matter of fact, there is another thing for us to consider. Would it not be wiser for us to go one step further and have no shipping-cases of, say, more than 12 sections? This would make the relative cost per section higher, but it would insure very much better delivery. If we must use the 24-lb. case we can make a very much stronger box by making it approach the form of a cube—that is to say, a double tier, 12 sections to the tier. There should be, then, three pieces of corrugated paper—one in the bottom of the case, one between the two tiers of sections, and one on top.

The advice is given to use carriers, and not without good reason. But many times, orders call for one or two cases at a time. What are we going to do? Ship the two cases by themselves? Of course we can take our present cases, find a larger box, and pack them in straw; but would it not be cheaper and far more satisfactory to make the shipping-cases right in the first place? With better cases, we could get some concessions from the railroad companies and possibly we could afford to have them shipped back to us as empties.

ITALIANS VS. OTHER RACES OF BEES FOR THE SOUTHLAND.

IF there is any one fact that was impressed on us during our recent trip south it was the fact that pure Italians—the most desirable race of bees, in our opinion, for most Northern localities in the United States, do not possess *all* the qualities needed in some localities. The South presents a great variety of not to say peculiar conditions, essentially different from those in the North,

One marked characteristic of the Italians is to breed up preparatory to the main honey-flow. Then when that is over they will cease brood-rearing This is a highly desirable trait in most northern localities. But in some southern localities that we visited, that *very characteristic* is a serious handicap in securing brood preparatory to another or the main harvest that will follow shortly after or perhaps in a few weeks. In several places in the South we ran into localities where there will be preliminary honey-flows, during which pure Italians would breed up enormously; and then, when the flow was over, they would stop breeding entirely. Apparently, from many centuries of environment they have become accustomed to making one grand spurt, and "wind" themselves in the race, to use a familiar figure.

Now, what some of our Southland bee-keepers desire is a strain of bees that will breed when they want them to. Said one bee-keeper, "We may have a preliminary flow that is extraordinarily strong. It is during such times that Italians will breed up well, and then stop altogether. Even stimulative feeding thereafter seems to lose its power over them." Well, it is coming to pass that some of our leading bee-keepers in the South have learned that a cross of leather colored Italians and Caucasians or Carniolans, both of which are more prolific breeders than Italians, make a very desirable strain—a strain that will not "wind" itself on the first preliminary honey-flow, even though it be a heavy one.

Mr. J. J. Wilder, of Cordele, Ga., who owns and operates 21 apiaries—9 in Florida and 16 in Georgia—has run across this condition in his localities, and has solved it by crossing his leather-colored Italians with Caucasians which he obtained from the government. Said he, "If the Bureau of Entomology had never done any thing else for the bee-keepers of the United States, it would have well served its purpose by introducing this desirable strain of bees."

Mr. A. B. Marchant—in fact, many of the bee-keepers along the Appalachicola River, Florida—had a preliminary honey-flow along in January and early in February of this year, that set their bees to breeding heavily; but in spite of all they could do to make them continue breeding to take care of their main honey-flow, yet to come from tupelo and ti-ti, the bees would not breed. All indications showed that there would be immense yields from tupelo; but when the writer left that region, it was feared there were not bees enough to gather it. When we explained this situation to Mr. Wilder he said he would overcome it by crossing leather-colored Italians with Caucasians.

Our readers will remember that our own personal experience with Caucasians in one of our northern apiaries was any thing but satisfactory; how they bred excessively out of season, and swarmed in spite of all we could do. They would build burr and brace combs, sticking every thing fast, and then

wind up by daubing every thing with bee-glue. It is easy to see, however, that these *very* qualities, undesirable for us here in the North, might serve an excellent purpose when held in restraint by a strain of bees having opposite tendencies.

This is a fruitful and important theme for discussion, and we shall be glad to hear, not only from our Southern but Western breeders who run up against the same problem.

AN IMPORTANT GOVERNMENT DECISION THAT INDIRECTLY FAVORS THE HONEY BUSINESS; SACCHARIN BARRED FROM FOODS AFTER JULY 1, 1911.

Two or three years ago we had considerable to say on the subject of saccharin—a product of coal tar, and hence poisonous as a sweetening for jellies, jams, beers, and soda waters. We explained to our readers time and time again, that any product of coal tar, when used in food, was injurious. The fact that it is 300 times sweeter than cane sugar makes it very cheap; and the manufacturer of sweet pickles, jams, and jellies, and the brewers, have been using large quantities of it in place of the more expensive sugar. We have been told that a large percentage of the soda-water fountains have been using the product.

We have been hoping for some years that there would be a government decision that would bar the use of saccharin; and now our dear old Uncle Sam has given a fair warning that on and after July 1 its use must be discontinued. This is what he says:

U. S. DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D. C., April 28, 1911.

The Secretary of Agriculture has to-day issued a decision, based upon a finding of the Referee Board of Consulting Scientific Experts, which forbids the use of saccharin in food on and after July 1st next. The decision is under the Food and Drugs Act, and will prohibit the manufacture or sale in the District of Columbia or the Territories of foodstuffs containing saccharin, as well as interstate commerce in such foodstuffs. The finding of the Board is the second since its creation, and is regarded as very sweeping, inasmuch as the decision affects more than 30 different classes of foods. Some of the articles affected are soft drinks, sweet pickles, jellies, and jams, and, in some instances, beer.

The decision as promulgated is signed by the Secretary of the Treasury, the Secretary of Agriculture, and the Secretary of Commerce and Labor, in order that the regulations embodied in the decision may be put into effect. The decision follows:

"At the request of the Secretary of Agriculture, the Referee Board of Consulting Scientific Experts has conducted an investigation as to the effect on health of the use of saccharin. The investigation has been concluded, and the Referee Board reports that the continued use of saccharin for a long time in quantities over three-tenths of a gram per day is liable to impair digestion; and that the addition of saccharin as a substitute for cane sugar or other forms of sugar reduces the food value of the sweetened product, and hence lowers its quality.

"Saccharin has been used as a substitute for sugar in over thirty classes of foods in which sugar is commonly recognized as a normal and valuable ingredient. If the use of saccharin be continued it is evident that amounts of saccharin may readily be consumed which will, through continual use, produce digestive disturbances. In every food in which saccharin is used, some other sweetening agent known to be harmless to health can be substituted, and there is not even a pretense that saccharin is a necessity in the manufacture of food products. Under the Food and Drugs Act, articles of food are adulterated if they contain added poisonous or other added deleterious ingredients which may render them injurious to health. Articles of food are also adulterated within the meaning of the Act if substances have been mixed and packed with the foods so as to reduce or lower or injuriously affect their quality or strength. The findings of the Referee Board show that saccharin in food is such an added poisonous or other added deleterious ingredient as is contemplated by the Act, and also that the substitution of the saccharin for sugar in foods reduces and lowers their quality.

"The Secretary of Agriculture, therefore, will regard as adulterated, under the Food and Drugs Act, foods containing saccharin which, on and after July 1, 1911, are manufactured or offered for sale in the District of Columbia or the Territories, or shipped in interstate or foreign commerce, or offered for importation into the United States."

We regard this as one of the most important and far-reaching decisions that have been rendered by the general government for a long time. Dr. Wiley, of the Bureau of Chemistry, and the time-honored champion of pure food, has long opposed the use of saccharin. The fact that he is now supported by his associates, and by those higher up, is a matter of no little importance. It is going to mean a big boost to the bottled-honey business that has heretofore had to compete with saccharin-sweetened jellies and jams, and some glucosed products that could be sold for less money than honey. It will mean, too, that comb honey will also have a larger sale, although it has never belonged to the class of cheaper products.

In spite of the corruption in high places, in spite of the graft and wholesale bribery in some of our legislatures that have been revealed lately, the world is moving to higher and better things. It is moving, because graft will be no longer tolerated. The legislators who had a price for their votes will be relegated to the past. When that day comes, we shall expect that all the injurious patent medicines, as well as all medicines containing large percentages of alcohol, and all injurious food products—injurious because they contain preservatives and injurious flavorings—will be barred from the stomachs of our American people. The day is almost here now.

Later.—The morning papers are telling how a little 18-months-old baby was made very sick by eating some patent medicine thrown upon the porch. The police force are after the dispensers of this medicine thrown out so promiscuously for the purpose of advertising. The law ought to be so rigid that no headache medicine can be sold or given away except on the prescription of a regular physician.

THE STEWART METHOD FOR TREATING AMERICAN FOUL BROOD WEIGHED IN THE BALANCE AND FOUND WANTING.

In the July 1st and 15th issues of this journal for last year, we published the Stewart method for treating American foul brood. In brief, Mr. Henry Stewart in those articles claimed that, by making diseased colonies very strong in a honey-flow, he

not only could cure the disease but *save all the combs*, no matter how badly they might have been infected. At the time we published the initial article we said in an introductory note:

> We are not so enthusiastic as to believe that Mr. Stewart's method of cure is going to revolutionize our methods of treatment for foul brood. So many things have looked good in the past, apparently were good, and turned out to be failures after all, that we confess that we are becoming more and more conservative.

And so it proved. Since that time considerable correspondence has arisen, some of which not only criticised Mr. Stewart, but the publishers of GLEANINGS, for giving out such a treatment that had not been more fully tested. Two State foul-brood inspectors, good friends of ours also, wrote us, expressing regret that the method had ever been given publicity, saying they felt they would be considerably handicapped in their work, for the reason that many careless and irresponsible persons, thinking they would be able to save the combs, would disregard their instructions to shake, and melt the combs and follow the Stewart plan instead; that they would make a mess of it, and keep infection in the locality indefinitely. We replied, saying that possibly we were wrong, but we believed it was the function of a trades journal to place a plan of this kind, that gave us hopes of saving combs, before the bee-keeping world, so that many expert bee-keepers could try it out; for we argued *if* there is even a *possibility* of saving the combs we ought not to turn it down without placing it before the public. However wise this policy may have been, reports since received from all over the country from persons who had tried the Stewart plan showed that it was a failure. In the mean time we began to get letters from some of Mr. Stewart's neighbors, informing us that, if we would investigate, we would find that his treatment was not an unqualified success even in his yards.

About this time we got in touch with one of the foul-brood inspectors for Illinois, Mr. J. E. Pyle, of Putnam. The latter wrote that he had visited Mr. Stewart and that he was given every opportunity to investigate his apiary, and treatment in particular. It is not necessary for us to go into details; but he came away satisfied that the treatment was not all that might be desired. We have also a statement from Mr. C. E. Bowen, of Linden, Ill., who was in Mr. Stewart's employ from April 1 to July, 1907. In this letter he says that he would not go so far as to say that the Stewart method was not a success; but that he and Mr. Stewart treated the bulk of the Stewart bees by the McEvoy method. He also went on to say that he tried the Stewart method among his own bees, but that it had been a complete failure in his locality. In another letter he says Mr. Stewart showed him some colonies that he was experimenting with, but that those colonies were in a worse condition when he left than when he first came.

These matters have all been referred to Mr. Stewart, who still seems to have unlimited faith in his treatment. He says that the reason why he used the McEvoy plan when Bowen was there was because the season was poor; that in order to make his plan work he must have a good honey-flow.

One or two facts have been presented that seem to indicate that Mr. Stewart had both American and European foul brood in his yard, although the evidence goes to show that the amount of European foul brood, if any, was very small. It is generally admitted that a strong colony in the midst of a honey-flow (two important factors in the Stewart system of treatment) will very often cure *European* foul brood; but so far no evidence in this country has been presented, excepting that from Mr. Stewart himself, showing that the plan has ever been a success with the *American* type of the disease. It is but fair to say, however, that Mr. Samuel Simmins, an English authority on bees, claims that it is possible for strong colonies to clean American foul-brood scales out of the combs; but it seems quite certain to us, (as we pointed out on page 58, of our issue for Feb. 1st) that his experience relates to the European type of the disease, which we are now reasonably sure is the foul brood often referred to by English writers.

Mr. Stewart, to prove his claims, says he is willing to establish a hospital yard where his method can be tested out before an impartial committee. But the verdict of some of our readers who have tried the plan and found it a failure is sufficient to convince us that the public had better let it alone.

We feel that Mr. Stewart has tried to be entirely fair and truthful; that certain diseased combs were cleared up of disease we can not deny; but it is our opinion that the said combs were affected with *European* foul brood and not the American type.

In this connection it is fair to state that a piece of infected comb sent from the Stewart yard to Dr. Phillips, of the Bureau of Entomology, Washington, D. C., was reported back as American foul brood; but this would not be positive evidence that the other disease might not also have been present. The fact that European foul brood is or was present in Northern Illinois, and that Prophetstown is also located in the northern part of the State, rather lends color to the belief that European foul brood was the disease that Mr. Stewart cured.

In this connection it was reported that a certain Mr. Stewart put in a protest against the passage of the Illinois foul-brood bill—a bill that would be more effective than the one on the statute-book; but we are convinced from the evidence in hand that Mr. *Henry* Stewart is not the Stewart who had any thing to do with it.

We have endeavored, as far as possible, to set forth all the facts gathered from our correspondents, covering a period of nearly six months. If we were to publish all the letters, the space of one whole issue of this journal would be taken up and then leave a lot more to be said.

Siftings

By J. E. CRANE, Middlebury, Vt.

Curious, but almost every year as the farmers begin to bring in maple sugar I have noticed an increased demand for honey.

That is a good point Mr. J. A. McGowan makes, page 136, March 1, that one or two days' neglect of little details may lose a season's crop.

That suggestion, page 122, March 1, about sweetening railroad men, is a good one. Not only do you get better handling of your honey, but their friendship and good will.

Mr. Byer's advice, page 125, March 1, not to let hogs run in a yard of bees, is good. But provided they are not too large, I like to have sheep in a yard to keep down the grass.

I don't think many of us, as we grow older, would care to go back and live our lives over again. But when I read F. Dundas Todd's "Bee-keeping as a Hobby" I think I should like to begin bee-keeping all over again.

Page 61, Feb. 1, Mrs. Acklin tells of a runaway swarm in California, just before Christmas. We are not troubled with runaway swarms here in Vermont at that season. No such annoyances from August until May.

Pretty good proof on page 150, March 1, that bees will sting black spots or dark cloths more promptly than light ones. My only contention has been that they will sting something or some person they are accustomed to less than one they have rarely or never seen before.

Why is it that, among the many means found in magazines now, one never sees honey and warm biscuits mentioned for the tea-table? I wonder if they think such fare would be too rustic; or have those who planned these elaborate meals never heard of honey? More advertising needed.

Page 123, Chalon Fowls is said to have presented a paper at the Ohio State Convention in which he showed how to develop a trade in "honey butter." Will he or some one tell us what "honey butter" is? [We understand that Mr. Fowls was referring to granulated honey in brick form.—ED.]

Frank Hill calls attention, p. 116, Feb. 15, to the value of introducing a queen-cell into a colony to supersede the queen. I submitted the same question last summer to some very intelligent bee-keepers, and it was their opinion that, if the queen was a year old or more, it would prove a success. It is a very important matter, and I hope to test it this year.

The advice that Hermann Rauchfuss gives on page 127, March 1, that bee-keepers should raise their own queens, is good, not only because such queens will be likely to prove more valuable than those shipped from a distance, but because they can be raised during the swarming season more cheaply; and no bee-keeper should consider his profession complete until he can rear his own queens.

Dr. Miller inquires, p. 60, Feb. 1, whether he shall melt up his combs because they are old. Some way I feel that bees do better on combs two or three years old than on those which are very old, as old combs contain not only a good many imperfect cells, but some which have been worked over into drone cells, rendering them worthless for breeding purposes because they are filled with old pollen.

J. E. Hand, page 148, March 1, has a short article entitled "Instinct Always the Same." Now, here are two colonies in the same kind of hives, with the same number of combs, and, as nearly as we can judge, the same amount of brood and bees, and alike in all respects; even their instincts are the same; yet one will swarm while the other works on through the honey season without a thought of it. Why is it?

Mr. A. A. Byard, of West Chesterfield, N. Y., came up to our Vermont bee-keepers' convention, bringing samples of his new foundation-fastening machine. It works somewhat differently from the Daisy fastener, in that it deposits on the section all the wax it melts, fastening the foundation in more securely with the same pains taken, and no wax runs off on one's clothes or on the floor. He sold about twenty-five to Vermont bee-keepers during the convention. The one he left with us has given good satisfaction.

Mr. Townsend believes in having water near his bees in early spring, where they can get it without being chilled. He says, p. 138, 139, March 1, "Only half the advantages of outside protection for bees during the months of April and May have been told. It makes nearly the whole difference between failure and success in the surplus crop of honey." Alas! we forget how frail a thing a bee is, especially in cool weather. When partially chilled by taking in nearly its own weight of cold water, a very light breeze beats it to the ground. If we could measure these losses I believe most of us would be surprised.

Bee-keeping in the Southwest

By LOUIS SCHOLL, New Braunfels, Texas

A REAL TREASURE.

A complete library of the best books on the subject of bee-keeping in all its branches is a real treasure to the bee-keeper. This is something that we have worked hard to procure for many years, and we rejoice in having secured so far nearly all the leading books on bee-keeping, and also back numbers for several years of most of the bee-journals. For the purpose of reference at any time, this is not only a great convenience but an advantage.

One of the latest acquisitions to our library, and one that has given us a great deal of pleasure, is GLEANINGS from the very beginning of its existence, nicely bound in book form. By comparing the first issue with those of to-day the progress which has been made is evident. We become aware that in this age we are enjoying a simpler bee-keeping than in the days of yore, and that our path has been made easier to travel by those veterans to whom we are indebted for the ways they have opened.

BEES AND POULTRY.

It may be interesting to our senior editor to hear that he is not the only poultry enthusiast connected with GLEANINGS, but that *we* are also "in the ring of poultry cranks." To tell the truth, keeping poultry works well with bee-keeping if the person so engaged understands the management of the combination. We have become entangled in these two lines of work for two reasons: First, because of the old saying, that a busy business man should have some kind of hobby on which to spend his spare time, and thus divert his mind from his cares. We have always suggested that there is no other side line like bee-keeping for busy men. But why have we never thought about a hobby for the busy business bee-keeper? It might be said that for him "more bees" would be a remedial measure; but would not that make his business life still more strenuous? For this reason we have made fancy poultry-keeping our hobby, and we like it immensely, as we get a lot of fun out of it.

The second reason has been the fact that, aside from the pleasure that we have gotten out of the hobby, we have found this new venture so remunerative that we have had to increase our poultry business to such an extent that it is really not a hobby any longer. The consequence is, we now have two businesses to look after, and will continue them as long as they work as well side by side as they have. Since most of the poultry work is early and late in the day, while the bee work comes in between these two periods, the combination works very nicely; and as long as we get our share of profits from both, as well as a lot of real pleasure, why should we not combine them? Of course, we are well aware of the fact that this is a time of specialty in all lines of work, and this is what we are trying to adhere to even now. Can we do it? We are trying to make a specialty, and strictly so, with our bees; at the same time we are trying to do the same with the chickens. Can we?

THE VALUE OF A GOOD ARMOR.

Time and again we have been in position to show that it pays in the long run to be well armored for extensive work in the apiary, especially if a great deal is to be accomplished. We have often had arguments presented to us to show that it is not so necessary to be protected absolutely by a good veil and by gloves. While all this advice may work very nicely with a few colonies of very gentle bees, we have not been able for many years to work our own apiaries in that manner. While we did not believe in wearing even a veil during the first eight years of our bee-keeping career, bearing many a painful sting unnecessarily, we do not now work in the apiary without gloves. The veils we have adopted are much more substantial than the flimsy makeshifts with which we were satisfied at first. These are now made of wire cloth, very much like the Alexander veil, but so that they can be worn with a hat — a thing that we must do here in the South. With such a veil, gloves on our hands, and every thing else bee-tight, we have stood our ground when "the other fellow" was retreating from a sudden onslaught. Of course, we realize that our bees are much more vicious than ordinarily. This is generally the case where they are handled in a hurried fashion. In this respect we believe they are very much like the Coggshall kind of which we used to read so much; and we venture the assertion that, where bees are handled by lightning operators to any extent, they are not the gentle kind that can be handled without veils and gloves.

It has been argued that slower manipulations should be practiced in preference to the rapid lightning methods of some of our most extensive bee-keepers; but we have found, after trying this, that, unless we got a more lightning-like move on us, we were not able to accomplish as much. And in our mind this is the only real business way of wholesale bee-keeping—a system whereby the maximum amount of work can be done in the shortest length of time, by which every cut-and-dried short-cut and labor-saving method can be put into play with good results.

Bee-keeping Not Such a Bad Business.

I took 4½ tons of extracted honey from 52 hives, spring count; sold all at 12 cents per lb. I have a good market in Ottawa City. I have 91 colonies in the cellar.

Yarm, Quebec, March 28. R. MCJANET.

Conversations with Doolittle

At Borodino

TOO MUCH POLLEN IN BROOD-COMBS.

A correspondent writes: "The combs in my hives are badly filled with pollen at a time when they should be filled with brood. Can I remove it? Why do bees store so much pollen and honey in the brood-combs just before the main honey harvest?"

In this locality two things generally incite the storing of too much pollen and honey in the brood-combs at the beginning of the season, or as soon as the bees become numerous and active during May and early in June. The first is, a poor queen; or, it would be better to say, one which does not lay enough eggs so that the increasing larvæ from those eggs will consume the pollen and honey as they come in from the fields. In other words, the old or field bees are too numerous for the laying capacity of the queen. The remedy in such a case is to change the queen for a younger and more prolific one. And this is a matter that should have been looked after during the latter part of the season before, for it is far better for a colony to have a prolific queen when spring opens than it is to try to introduce such a queen to take the place of a failing one in May or June. The change will generally consume a period of from five to ten days; and this, with the slowness of the failing queen earlier, sometimes makes such a difference in the number of bees at the time when they are most needed that there is a partial failure in the honey crop.

The other cause for the storing of too much pollen and honey in the brood-combs is, too large a hive or brood-chamber. Such a colony is in nearly the same condition as is the one having the failing queen in a smaller brood-chamber; for if the season opens with a large amount of comb unoccupied with brood, the bees will begin storing in the empty comb rather than enter the sections, either to build comb or to draw out foundation. Having once commenced to store honey and pollen in large quantities in the comb immediately surrounding the brood, the bees are very apt to continue doing it to the detriment of the honey crop.

But even with a good queen and a hive of the right dimensions to accommodate her prolificness it will often happen that she does not breed up to her full capacity when pollen is coming in very freely. This is something I have never been able to account for satisfactorily, although I have spent much time in making experiments for the purpose of trying to find out. We have an excess of pollen here from the hard maple, which comes between the willow and apple bloom, or at just the time I have always been the most anxious for an abundance of brood; for the bees from such brood are those which work to the best advantage in the clover harvest. During hard-maple bloom, if the weather is good, some colonies will fill combs almost solid with pollen, with more or less honey along the top-bars to the frames. Many times I have removed these and have put empty combs in their places, with the result that they were as full as the others in a few days without a single egg.

Having found that I did not gain much in this way, I next put in dummies in place of the frames taken out, in colonies strong enough for the sections. Thus, with a greater force of the bees above, what honey did come in was used for making a start in the sections, thereby removing the honey part of the pressure from the brood-combs, while at the same time a great gain was made toward a good crop later, in the sections.

Some years after this, I filled frames with brood foundation and took out those which contained honey and pollen, using these foundation-filled frames in place of those which had been removed. I discovered that, where honey enough was coming in from the fields to cause the bees to draw out this foundation, the queen would fill it with eggs before the cells seemed deep enough for much honey or pollen to be stored in them. I then had brood where I had bad only honey and pollen before, when I used empty combs.

All observing apiarists know that, when queens are laying at their best, the bees give them food every few minutes. But at these times, when the combs are being crowded with pollen, I have rarely noticed the bees doing this. For this reason I have always felt that the fault lay with the bees rather than with the queen, and that, if any plan could be devised whereby they could be caused to feed the queen during an excess of pollen to the amount necessary for her greatest prolificness, or, in fact, at any time when an excess of eggs is desired, we would have the "key" to the situation, for this pollen and honey could be changed into brood at will. But the dummy (or foundation) plan, as given above, seems to be about the only thing in sight so far.

There is always something about drawing out foundation or the building of comb that sets the bees to feeding the queen more abundantly, and she in turn lays more than when no comb is built. This seems to be their instinct when building comb. Where combs can be drawn from foundation, or built from starters during the breeding season, they are usually filled with brood later; and where young brood is maturing rapidly much honey and pollen are used, thus keeping the combs from becoming overloaded, and assuring a lot of bees for the harvest.

But we are often more scared than hurt over this pollen matter; for in most places there comes a scarcity of pollen a week or so later, at which time the bees seem to become suddenly anxious for brood, so that combs apparently nearly spoiled because they were so full of pollen very soon assume a different appearance by being filled with brood; and by the time the harvest from clover is on, very little more pollen appears in the hive than is actually necessary.

General Correspondence

BETTER PACKING-CASES.

Why We Can Afford to Pay More for a Case that will Insure the Safe Arrival of Comb Honey; Paper Cases Not Affected by Water.

BY J. E. CRANE.

You say, Mr. Editor, on page 122, that at both the Cincinnati and Indianapolis conventions you emphasized the importance of larger and stronger shipping-cases—larger, to admit the use of corrugated-paper partitions, and stronger, to stand the rough usage they very often receive. Quite right you were, as such cases will prove a great improvement over many now in use; and while, to my mind, not the best, they will serve a most excellent purpose, and make an easy resting-place in the transition from a wooden to a complete paper case; for, if the truth must be told, it is an awful comedown to think of giving up those beautiful sandpapered white-basswood shipping-cases, with sliding covers, glass fronts, and all that, for a tan-colored paper box tied up with a string. I know, for I have had some experience right along these lines. Five years ago I sent quantities of honey to market in just such cases as you are now recommending; but, as I said, they are a great improvement over many of the cases sent out during the last few years. I think the improvements you suggest are, perhaps, about as much as bee-keepers as a whole will at present stand for; but when once the bee-keeping fraternity get aroused to the importance of this subject they will want something more satisfactory than even a wood and paper case.

I was much interested in Mr. Weber's statement, that paper cases had proved very satisfactory except that, when they get wet, they are likely to go to pieces, as they will not stand rain or wet. I used to worry about what might happen if paper cases should get wet; but I am not lying awake nights any more thinking about what might happen, for we have for the last two or three years had them made of water-proofed paper that will turn water like the back of a goose. Indeed, I have poured water on to such paper and let it stand for an hour, without its doing any serious harm; but it is better to keep both wooden and paper cases from getting wet; for, if they do, they seem to absorb dust like a sponge, and reach their destination in a most unattractive condition.

You speak of the extra cost of five cents per case. That means $5.00 per 100, or $50.00 per 1000, and will look pretty large to some bee-keepers; but isn't the honey worth one fourth of a cent a pound more if put up in such cases? A dealer in Boston told me a few weeks ago that, where they sent out a wooden case, they crated it in hay, and then charged ten cents for such packing. This is not a quarter cent, but half a cent a pound extra. One dealer told us some time ago he would rather pay two cents a pound, and get it unbroken, than to run the risk of breakage as usually shipped.

We have been in the habit of charging five cents extra for honey packed in paper cases where the risk of breakage was reduced to a minimum, and dealers have been willing to pay it, too, without a whimper. I do not think it requires any prophetic wisdom to see that honey put up so as to reach the retail merchant without breakage will, after a little, bring from one-half to one cent more per pound than in less carefully packed cases. If a retail merchant finds only one comb broken in a case of twenty sections it is likely to reduce his profits half a cent a pound on the whole case.

There is another matter you might have mentioned in this connection to advantage; and that is, that better packing of honey will increase the sale and demand for it—I am not sure but as much as the campaign of advertising, so much talked about of late. A large per cent of goods is sold these days by agents, or drummers. It is comparatively easy for the drummer of a large wholesale grocery house to sell one or more cases of honey with a large bill of other groceries; but when the honey is received in a broken condition he is up against a good deal of a proposition when he tries to sell another case to the same dealer. A friend was telling me recently of being in a store in the east part of this State, some time ago. He saw a case of honey, and was looking it over when the proprietor observed, "You see, I have a case of honey."

"I was noticing it," said my friend.

"Well, you see the condition it is in."

"Yes, I see."

"Well," said the proprietor, "we could sell a large amount of honey if we could only get it in good condition; but it is no use."

Now, defective packing is not alone the fault of bee-keepers. It appears to be a national fault or disgrace, or both. Our consular reports are constantly talking of the necessity of better packing, and yet the shiftless ways continue. Only the other day I picked up the *New England Grocer*, and noted what it had to say along this line, which is somewhat humiliating. "The Germans and English, especially the Germans, lead us in trade in South America, where we should have it all, or nearly all. The people of those countries, especially in South America and the countries of Africa, admit that American goods and American manufactures are superior, but they can not buy them, many times, when they would like to, because the Americans will not pack their goods as the customs of the countries demand, and to suit the different conditions of transportation. Americans are not careful in packing their goods. They do not regard the conditions of shipment and the conditions of transportation in foreign

countries, where things are primitive, or, at least, primitive with things here, as seriously as they should."

Middlebury, Vt.

WHAT HAPPENS WHEN THE QUEEN WITH A SWARM IS KILLED.

BY DR. C. C. MILLER.

An Indiana correspondent writes: "If a swarm is about to issue, and I place a queen-trap in front of the hive, and catch the queen and kill her, will the swarm go back to the old hive and do as well as they did before they swarmed? Have you ever had such a case in all your experience?"

I never caught a queen in a trap and killed her, but I have had practically the same thing a number of times. My queens are clipped; and when a swarm with a clipped queen issues, it sometimes happens that the queen fails to return to the hive, and then we have the same thing as if I had caught and killed the queen.

Generally the swarm will circle about for some time, and then return to the hive. Sometimes, however, the swarm will settle on a tree or other object, and remain clustered, may be three minutes, may be fifteen minutes, before returning.

In a large apiary, at a time when a good deal of swarming is going on, there are sometimes unpleasant variations of the program. Suppose No. 25 has swarmed, and the swarm has returned to its hive. Just at this time No. 41 swarms. After circling about a little while, the swarm from No. 41 discovers its queenless condition; but, hearing the roaring made by the bees at No. 25, it enters No. 25 and peaceably unites there. This does not occur very often, and there is no great loss, for all the bees are yet in the apiary; but still one would rather each swarm would stay where it properly belongs.

As to conditions in the hive after the return of the swarm, of course they are not the same as before. The colony is queenless, with a number of queen-cells present. I don't know how much difference there is in the matter of industry, but I think not such a great deal. Somewhere in the neighborhood of eight days from the time the swarm issued, the first virgin is ready to issue with a swarm. In rare cases the stoppage of the honey-flow a few days before this time drives out all thought of swarming, and all the other virgins are killed in their cradles.

For a day or so before the young queen issues with the swarm, she spends her time scurrying about and piping. When all is still in the evening, put your ear to the hive and you will plainly hear her. Next morning, before the swarm has time to issue, go to the hive and destroy *all* queen-cells — no need to find the free virgin; for if she was piping she is all right, and that ends all swarming and leaves the colony in fine condition for work.

SECTIONS CAPPED DARK WHEN PRODUCED NEAR OLD BROOD-COMBS.

From far-off Australia comes this letter:

Dr. Miller: — I have read your "Forty Years Among the Bees," and GLEANINGS for about eight years, and I am rather surprised to find how generally dirty black brood-combs are used in producing comb honey. In most of the plans for dealing with swarming, the old combs are retained (in fact, I remember what good capital you consider brood-combs perfectly built — all worker-cells). In any case, where colonies do not swarm, or are prevented, the supers are given over the old brood-nest. In my limited experience in producing comb honey I have found it impossible to get nice clean sections above dark brood-combs, either with an excluder or without. The bees always seal the lower part of the sections perceptibly darker, owing to the proximity to the dark brood-combs. No doubt they mix some of the brood-cappings in when sealing the sections. I can manage to get clean sections by hiving, or shaking swarms on starters or foundation (or *new* combs of sealed honey from the previous season, *a la* Doolittle). Of course, in these cases the bees have nothing but clean wax to cap the comb with; but even then after several generations of brood have been reared the combs darken, and the sections also are not capped quite as white as at first.

A point that may have some bearing on the subject is that our honey-flow from eucalyptus gums lasts for several months, and is not often *very* heavy, so that bees may be more inclined to appropriate available wax than to secrete all fresh for capping. My hives are Danzenbaker, and so the brood comes very near the sections, being often right up to the top-bars of the brood-combs. During an extraordinarily good flow from "stringy-bark" gum (season before last). I noticed that the sections were very clean, even though it was dark honey, and at the latter end of the season.

I take off sections as soon as they are sealed, so that if any are dirty it is not on account of age.

What I should like to know is, how you manage in America (and yourself particularly) to get clean sections built over old brood-combs. In your book I do not find that you advise giving the bees a clean start each season. What do you think of the plan of shaving brood-combs down to the foundation? The bees accept them readily, and build them into new combs very nicely.

Hahndorf, So. Australia. L. W. DARBY.

I'm not sure I know enough to help you out, but I shall be glad to tell all I know on the subject. You are quite right in supposing my sections are produced over old black combs. No brood-comb is ever discarded on account of age. You are also right in thinking that proximity to the black combs favors darker sections. And in that, according to my first thought, was the secret of your trouble. That is, I thought the distance was too small from brood-comb to section. To be sure, my brood, as well as yours, in the height of the season, comes clean up to the top-bar (although I use Langstroth combs), but still a bee must travel 1¼ inches to get from the top of a brood-comb to the bottom of the comb in a section; for the top-bars of my brood-combs are ⅞ thick. But, as I read on, that theory was knocked out, for you say that you have the trouble still with excluders.

There may be something in your suggestion as to the slow yield; but I sometimes have slow yields, and I never noticed much difference as to whiteness in a slow yield. Yet there may be some.

There is just one guess left me that may possibly work — possibly, and possibly not. That guess is that you allow the sections to be *finished* close to the block combs. I

don't. It matters little how close to black combs the sections may be before the sealing begins. Years ago, when I used wide frames, I practiced putting a brood-frame in the super between the frames of sections, as a bait to start work in the sections. It was effective, only if I didn't remove the brood-comb before sealing began on the sections, the sections would be black enough. I do not remember that there was any trouble with the cell-walls, and am inclined to think that it is only after the work of sealing begins that the bees add scraps from the other combs.

So the matter of distance cuts an important figure; and if I should leave a super of sections next the brood to be sealed I should expect the sealing to be darkened. But a super is practically never left so close as that. The bees must travel at least 5¾ inches to get from the brood-comb to the comb in the section. Oftener the distance is 10 to 15 inches, and it may be 2 feet or more.

Perhaps I ought to explain that, when the first super is half filled, it is raised up and an empty one put under it; and as each super is added, the others are raised; so that in a few cases seven supers will be on at a time before the upper ones are ready to take off. In a rapid flow the lower super may be raised before it is half filled, possibly even when only a fair start has been made; and in a poor flow it may be more than half filled. But even if the bees should begin sealing before the super is raised, that beginning will not be at the bottom of the section, but at the top, at least three or four inches above the black comb.

If, now, your practice is the same as to raising supers, then I don't know what the trouble is.

Marengo, Ill.

EXTRACTED HONEY.

The Reason why Consumers Know Nothing About it.

BY E. G. HAND.

If you have not already closed the lid on the discussion which was opened in GLEANINGS a few weeks ago, page 3, Jan. 1, regarding a name for extracted honey, I should like to offer an observation and a suggestion —not a suggestion of a name, but something more to the point.

In your last article on the subject, p. 85, Feb. 15, you remark, with just a suspicion of resignation which may be read between the lines, that the public have learned to call honey removed from the comb "strained" honey, and that there seems to be no way of getting them to call it any thing else. My observation is that the reason the great consuming public call it strained honey is because they have been doing so rightly for — how many thousand years is it? And they have been doing so wrongly for only about fifty years, and have not discovered their mistake yet, simply because they have never been *told*, or have never been shown the difference. In other words, the advent of the honey-extractor has not been properly advertised.

Instead of so many bee-handling stunts at the fairs and elsewhere—demonstrations which are, after all, more spectacular than educative — my suggestion is that exhibitions be given of the handling, extracting, and canning or bottling of honey. A few years of this procedure, coupled with a certain amount of newspaper and magazine advertising, would soon teach the public to be up-to-date in the names they call honey. If we just sit quietly back and wait, it will take as long for people to unlearn the "strained" idea as it did for them to learn it. If we want them to *know*, we must tell them. I go to the big fairs, and see men making various kinds of biscuits and puffed cereals, and other kinds of food products. I watch them make boots and shoes, carpets, and even heavy machinery. In the "honey-building" I observe an abandoned extractor, and a few people outside the railing looking at it and wondering what it is for, while its owner is trying to sell a five-cent bottle of honey to another crowd at the other end of the railing.

We have it all in our own hands. What are we going to do about it?

Cobalt, Ont.

GRANULATION OF BULK COMB HONEY.

No Trouble from this Source in the South.

BY W. C. MOLLETT.

On p. 163, March 15, Mr. J. E. Crane says it would be impossible for him to handle bulk comb honey on account of granulation. I have also noticed that some bee-keepers in the North object to it on the score of cleanliness. While these may be valid reasons against it in the North, they are not applicable to this locality, nor, so far as I know, to other parts of the South.

As to granulation here, there is really little if any difference; for almost all the honey secured will keep about a year before granulating. In local markets here, granulated honey sells as well as any.

As to cleanliness, I can see no objection, as I can handle bulk comb honey as easily as sections. This depends almost altogether upon the person who handles it. I once bought a can of extracted honey from a Northern bee-keeper. It contained dead bees, insects, and other sediment, and was not fit to use. Of course, this was an exception; but I never will buy again of *that* man.

As to price, I have no trouble in selling all the honey I can secure, at from 12½ to 15 cents per pound in bulk; and I am of the opinion that the bees will store a third more

honey in frames than they will in sections. I can sell bulk comb honey more easily here than that in sections, as most people would rather have it at the same price. Extracted honey does not sell well in this locality, on account of the belief that it is adulterated with glucose and other substances. This was the case before the pure-food law was passed, and on this account it will take a long time to overcome the prejudice against it. As long as bulk comb honey sells at practically the same price as that in sections, I prefer to produce it, as I think it would cost at least five cents more per pound in sections. This difference of opinion as to bulk comb honey seems to be just a matter of custom. I can see no reason why it is not just as delicious and just as clean when handled carefully as section honey, and I am glad that most of the people of the South are of the same opinion. Of course, we all want to sell honey in the handiest and most profitable way, and it would be absurd to think that honey-producers of the North could dispose of their product in bulk until the opinion of the consumer changes.

There is no question in my mind as to the fact that the price of honey is too low; and I attribute this to the idea which seems to be generally diffused, that honey is adulterated with glucose and other syrups, and even that comb honey is manufactured. I also think that first-class honey, such as that from white clover, etc., should bring 25 cents per pound, and that the time is not far distant when it will. The prices of honey are far lower in proportion to cost of production than any other kind of food-supply. If the present pure-food law had been passed ten years sooner, I am sure that the price of honey would have been much better now than it is. However, we can only wait and hope for better prices in the future.

Stonecoal, W. Va.

HANDLING BEES.

Advice to Beginners All Right.

BY I. HOPKINS.

The recommendation to "give a few puffs of smoke, then wait a couple of minutes for the bees to fill themselves with honey when you may handle them without being stung," and which Dr. Miller condemns in the following words: "That's the sort of foolish advice still too often given, even in books" (see GLEANINGS for Nov. 15, p. 714), moves me to say that the doctor is entirely wrong in condemning it, for the advice slightly modified is excellent for those for whom it was intended, and the books containing such advice are to be commended.

Further on the doctor says, "A practical bee-keeper hasn't time to wait for any thing of the kind." True; but the advice is not intended for "practical" (experienced) bee-keepers, but for beginners, who may, for instance, have to transfer their bees from common boxes to frame hives, unaided, except by such instructions as they can obtain from text-books.

I have been present on many occasions when novices were undertaking their first transferring; and in order to give them assurance through the avoidance of stings, I have shown them, in the first instance, so far as this is possible, that, by giving a few puffs of smoke and then waiting about *one* minute before giving the bees another puff, they can turn the box of bees upside down with safety, a few seconds later, and then transfer by drumming or in any other manner decided upon. The doctor knows as well as any one that "bees filled with honey seldom volunteer an attack." Let a novice come out successfully from his first manipulation and he will, as a rule, go about the second one with all the confidence imaginable; and if he is made of good bee-keeping stuff he will soon do as the doctor or other "practical" bee-keepers do.

Auckland, New Zealand.

A NATIONAL HONEY-SELLING ORGANIZATION.

The Lack of a Uniform Grade and Quality a Great Objection.

BY J. M. DONALDSON.

The ideas expressed in Mr. Cavanagh's article, p. 146, March 1, are, without doubt, a move in the right direction; but, like other writers on this subject, he has overlooked one of the stumbling-blocks. He points to to the fact that packers of other foods are reaping a harvest by advertising. We must take into consideration the fact that syrup, corn, peas, canned soups, breakfast foods, and, in fact, almost every thing in the food line, has just what honey lacks—that is, uniformity. We have clover, buckwheat, basswood, sage, mangrove, and many other different flavors. Again, in density, flavor, and ripeness, honey from different sources will give two or three grades, depending on the skill of the producer. The success of any article depends on quality and uniformity. When the housewife buys a package of food that suits her and the family she usually asks for the same brand of goods. Now, suppose she buys a package containing clover honey, which the family likes; but when she gets the next package, and it contains buckwheat or some other strongly flavored honey, how long will that family patronize our industry? If a central station were established, the honey should be graded according to quality, flavor, and color. In this way customers would get the same grade and quality at all times.

I do not claim to be an advertising man, but just an ordinary bee-keeper who has always marketed his own crop. However, I once worked in a bottling-house that handled carloads of honey each year. I mention this in order to show why I think one

of the plans would be a failure. On p. 147 Mr. Cavanagh states that sales would be made from the office, and orders shipped direct from members' apiaries. That looks well on paper; but is it practical? While I was working in the bottling-house a sample of honey came in which was good in every respect; but when the shipment came the honey was packed in old milk-cans that had long since passed their days of usefulness, and, to cap the climax, they were tied up in fertilizer-sacks which still contained enough of that product to make their original use apparent to all who came near them.

Just one more case. A bee-keeper had been successful in procuring a crop of fine honey. It was bought from a sample. One sixty-pound can was emptied in the heating kettle along with some two or three hundred pounds. We soon noticed a very strong odor. Investigation revealed the fact that the honey had been carelessly handled, being put in a can containing linseed oil. The result was, that about three hundred pounds of honey was ruined, and bottling had to be suspended until the kettle was emptied and thoroughly cleaned. Besides these two cases I have seen honey come in that was so sour it was hardly fit to use. Such cases as these grind hard, even on men who understand handling honey; but consider the effect they would have on the housewife, grocer, or druggist.

On page 147 Mr. Cavanagh says further, "They are paying now in the city an average of 20 to 25 cents per pound for extracted honey, but we can market it for less by direct means." If he can do this, I believe that he has the key to the situation; but from personal experience I doubt it. He will have rent, insurance, fuel, taxes, carting, and numerous other bills. His honey for table use will have to be put up in a suitable package (and the trade demands an expensive one), in such a way that it will not granulate, which requires experience and costs money; and with the present wholesale prices I do not think that many packers are crowding John D. or Andy, even if they do get from 20 to 25 cts. per lb. It is not the packer or dealer who gets this price, but the retailer. The producer selling to the dealer in a large way makes one shipment and receives the cash. Thus the commission can be divided between the dealer and producer.

Personally I think every bee-keeper who can should work up a home trade. He should use the best grade of honey put up in a neat attractive package, and should personally conduct a house-to-house canvass. Those who have neither time nor inclination for marketing in that way should devote their energies to producing a better grade of honey, and sell direct to the distributor who can blend, and discard honey not suitable, thus putting out a uniform grade. Good honey does not need to go begging.

Moorestown, N. J., March 23.

BEE-KEEPING FOR BEGINNERS; ILLUSTRATED.

The Use of Bee-escapes not Advisable if Queen-excluders have Not been Used over the Brood-chambers; How to Free the Combs from Bees without Shaking them Off.

BY E. D. TOWNSEND.

In our outyards we can not use bee-escape boards, for these do not work well except when queen-excluders have been used; and as we have always managed to do without these latter we have to get along without the escape-boards; for if there is any brood above the brood-chambers the bees do not desert it and go down through the escape to the combs below. On this account we have to depend upon other methods of freeing the combs of bees — a system not without its advantages, for no elaborate arrangement is needed for reheating the honey before extracting, as is necessary if the escapes are used.

It has been our experience that, if the bees are shaken from combs into an empty hive set on top of the brood-chamber or on the ground in front of the entrance, so the young bees that can not fly may run in, some of the combs are cracked so that there is more or less dripping of honey. This drip and the exposing of the combs causes robbers to be numerous. Sometimes during a dearth of honey (and all our honey is extracted during the period when no honey is coming in), robbers are so bad that we have to stop extracting for the time being until things quiet down. After a few such experiences we made an effort to improve our method of freeing the combs from bees. With the help of the engravings I will try to explain how most of this work is done without exposing the combs to the robbers to any great extent.

In the last issue I described our method of opening hives and removing covers, etc.; so in this present article I will begin with the cover removed, and give each step in detail until the combs are freed from bees and placed on the wheelbarrow. The use of a wheelbarrow in a bee-yard will be a part of my next article.

If the reader will turn to Fig. 1 he will notice that the operator is shown with the smoker in both hands. This is the only instance where we use both hands for the bellows of the smoker, and here both hands are needed when smoking the greater part of the bees down from an upper story. As explained in my former article, the wind is taken advantage of, for the smoker is so placed that the smoke is blown over the tops of the frames, as shown. When the honey is nearly all sealed over as it should be at extracting time (and as it will be if proper methods are followed during the honey-flow to give enough room but not too much room for the storage of the honey), it is no trouble to smoke the bees down below. Then this upper story is quickly removed to the wheelbarrow, and covered

Fig. 1.—Smoking the bees down from the upper super. Fig. 2.—Loosening the lowest super and smoking the bees down from the top of the brood-chamber. Fig. 3.—Sliding one comb after another to the side of the hive to brush off the bees.

with a robber cloth. If one is slow in getting this upper story removed after the bees are smoked, especially if the colony is of the nervous kind, many of the bees will rush back on the combs again.

Extracted-honey producers during the progress of the flow usually lift up the nearly filled super and place the empty one underneath. When this method is followed, the partly filled super is at the bottom at the close of the honey-flow. It is almost impossible to smoke the bees out of a story of honey if the combs are unsealed, or even though only partly so; and if such a super is being handled, or if for any reason the bees do not run down readily, we proceed as follows:

As shown in Fig. 2, the super next the brood-nest, which is the one that usually contains the unsealed honey, if any, as explained above, is pried loose from the brood-chamber in order to break loose any brace-combs that may have been built between the upper combs and the brood-combs below. A little smoke is blown in as shown, and then this super let down again on the brood-chamber in its usual position. Smoke is used until the bees on the lower third of the combs, at least, have run down below, and then a comb from one side of the super is removed as shown in Fig. 3. If robbers are bad, this comb, after the remaining bees are shaken off, is placed in the empty super provided for the purpose; but if there are no robbers about, the remaining bees need not be shaken from this first comb removed, but it may be merely set outside the hive-body, the bees left on it protecting the honey from robbers. A little smoke is blown in the place made vacant by the removal of the one comb; and with a long brush, as shown in Fig. 4, the bees are brushed from the side of the hive and also from the side of the next comb. Now this next comb is pried loose and slid over to the side of the hive, Fig. 5, and then the two sides of the combs thus spread apart are swept clean of bees. The comb at the side of the hive is then removed to the empty super, the third comb slid to the side, and so on across the hive. This work should be done quite quickly or else the sides of the combs first freed of bees will be covered with those that may run back. As soon as all the combs are removed, and the super freed from bees, it should be lifted off the hive at once, it having been previously loosened, as explained, and placed on the wheelbarrow, Fig. 6, before any of the bees below have a chance to return.

If the first comb removed is set outside of the hive as in Fig. 3, as mentioned, the remaining bees should now be shaken from this comb as in Fig. 7, and the comb placed in the super in the wheelbarrow with the rest.

At first thought all this seems like a slow and laborious method of removing combs to extract; but the most honey one man ever removed in one day in our yards (3000 pounds) was removed by this plan. Of course, we carried quite a number of bees into the extracting-room with this 3000 pounds of honey—perhaps as many as would be found in two natural swarms; but none of these bees were allowed to escape from the extracting-room during the day, but were carried out at night after they had clustered near the windows where we could get them. If there are bee-escapes above the windows they should be closed until toward night; and then, after most of the bees have been carried out, the escapes may be opened and the remaining bees smoked so that almost all of them will go outside.

Remus, Mich.

LOADING AND UNLOADING POWER HONEY-EXTRACTORS,

How Systematic Handling of Combs Saves Time.

BY O. B. METCALFE.

There are some bee-keepers just now who are contemplating the purchase of a power-driven extracting-outfit. My advice is that, if one has as many as 300 colonies of bees run for extracted honey, he should get a power-driven outfit, especially if all the colonies are in one yard. I know of some bee-keepers who are hesitating about getting an engine, because they feel that they are not mechanics enough. All such I would urge to get one by all means. It is great fun. I do not know of any thing I enjoy more than making my gasoline-engine get up and go when it does not want to.

Fig. 1 of the series of moving pictures shows a young man, Mr. N. C. Wayne, who worked with us last season, in the act of lifting two frames from the frame-box with his left hand. His next move is to take one of these frames by the middle of the top-bar with his right hand prior to putting them both into the baskets at once, as shown in Fig. 2. In order thus to load the extractor as quickly as possible, the uncappers must put the combs in the comb-box with the top-bars all turned one way; and the ratchet which holds the power on or lets it off should be set at the notch which will just keep the extractor turning slowly. Small hoppers on the comb-baskets in the extractor would help greatly in doing very rapid work. I believe that a hopper-shaped guide on the top of each basket in an eight-frame extractor would increase the amount a fast man could extract by about 200 lbs. per hour when working his best.

Fig. 3 shows Mr. Wayne unloading the extractor. The comb he holds in his right hand was previously taken out with his left hand and transferred to the right. In this operation the operator should never take his eyes from the work of his left hand. The power can be put on one notch further or so as to run the extractor about as fast again as when loading the extractor; and the left hand must have nothing to do but to lift the combs straight up as the baskets pass.

Fig. 4.—Brushing the bees from the outside comb and from the side of the hive. Fig. 5.—Brushing them from one side of two combs. Fig. 6.—Transferring the beeless combs to the wheelbarrow. Fig. 7.—Shaking the bees off the last comb.

The operator will soon learn to receive the combs in his right hand and toss them in a fairly regular pile behind without looking around. (Some might not want to have their fine combs treated that way; but no breakage occurs from this practice). I think that one skillful man, by this method, can unload three extractors while a man who takes out a frame at a time and places it in the super, then moves up his extractor and gets out another, is unloading one.

In Fig. 4 the operator is seen in the act of picking up four frames at once to place them in the super, as in Fig. 5. In Fig. 6 he is reaching back for three more to make out a super of seven frames. This placing of the frames in the super is done just after the extractor has been filled and started up. Any rearranging of hive-bodies, or stacking of supers with empty combs, can be done after the extractor has been reversed.

Mesilla Park, N. M.

HOW COMBS SHOULD BE HANDLED WHEN LOADING AND UNLOADING A POWER HONEY-EXTRACTOR.

AN AMATEUR'S FIRST YEAR.

BY R. J. RULIFFSON.

For several years I felt that I had latent somewhere in my system those germs which, if given proper culture, would produce a distressing case of bee fever; and during the summer of 1909 these same germs began to multiply so rapidly that, on the 12th of August of that year, I bought a five-frame nucleus of Italian bees with a select tested queen. This locality is an exceptionally good one for flowers, flowering shrubs, clover, linden, and for locust and sweet clover.

R J. RULIFFSON'S SWARM SHAKEN ON THE ALIGHTING-BOARD OF THE NEW HIVE.

The nucleus arrived with apparently no loss of bees in transit, and was duly installed at sunset on the day of its arrival. This was about the last of the honey-flow from basswood here; but sweet clover came on in great profusion, and by Sept. 20, or thereabout, these bees had drawn out the foundation in the remaining five frames, and had become a full-sized colony.

The fall was an unusually dry and hot one; but I could have secured a small amount of surplus from buckwheat and aster. However, I let the bees fill their hive to overflowing; in fact, they went so far as to build many bridges of wax between the brood-frames that they filled with honey. Late in October I built a cover out of ⅞ matched boards to slip down over the hive for winter protection. I did not know enough to provide a chaff cover, as I think I would now do; but over the frames was a piece of oil-cloth, and over that the regular cover. This constituted the only protection afforded the colony; but during the winter and spring I found less than fifty dead bees; and these represented nearly all there were, as their hive at all times was as clean as a dining-table.

On March 10 a neighbor (a florist) complained to me that the bees were ruining the lilac, genista, rambler rose, and other flowers which he was holding back for Easter trade. I went over to his greenhouses with him, and found bees in such numbers that they made the rambler blossoms look like a balled queen. There were quantities of black and hybrid bees there also; but as I lived next door, my bees were charged with all the damage. Later in the day, after the sun had gone down, my neighbor began to cool off to such an extent that he was perfectly agreeable to an arrangement whereby my bees could be closed in until Easter. I accordingly put my bees in the cellar. During the period of confinement there were warm days when I believe I felt worse than the bees in their mad attempt to get out after pollen; but I managed to relieve temporarily their desire to get through the wire netting by sprinkling water on it. The Saturday before Easter, I put them out on the old stand, at which time there were pussy-willows in bloom, and these, with the soft maples, were sufficient to keep the bees out of the greenhouse.

On one of the nice warm days in April I decided to clip the queen. There was very little choice in surgical instruments, as I had nothing between my wife's manicure scissors and the ax, so I chose the former with its curved blades, and, taking the smoker (I do not use veil or gloves at any time), I started in on this very uncertain undertaking. I discovered the queen on one of the center frames, and at each attempt to get hold of her I failed. Finally, however, I got her between my thumb and index finger. I do not believe my first trip in an airship could be half as nerve-racking as the fear that I would squeeze her too tight and permanently injure her. At the same time, I wanted to clip off enough of the wing-bow and yet not cut too close to the body. I finally decided that I would cut off only the

FIG. 1.—W. H. HARBER, ROCHESTER, N. Y.
Mr. Harber works nights on a newspaper press and spends what time he has in the daytime with his bees.

bow part of the wing, which I did, and I felt relieved when I saw her scamper off as she was put back on the brood-frame. The hive was literally alive with bees, and packed with brood and honey.

On May 16, at about 11:30 A.M. I received a phone message that the bees were going away, and to come at once. My office is within 200 feet of the house, and I am convinced that I did not take more than ten steps to get there. I had previously given careful and frequent instructions to those at home what to do in case of swarming; but the excitement had been too great, and I found the queen was in a neighbor's wife's hands trying to get out between her fingers, where she (the queen) had been shifted from the hands of my wife to allow her to bring out the new hive. I actually believe that, had I not arrived as I did, they would have put the ash-box on the old location instead of the new hive. I was not as cool as an ice-chest, but I took advantage of the demoralization and put things aright. The swarm clustered low; and to hasten the return of them to the hive we shook the bees into an apron and dumped them in front of the new hive, and then released the queen. They were all in at 1 P.M.

Just nine days later I examined the swarm and found every one of the ten full sheets of foundation drawn out so that one could hardly get a lead-pencil between. Owing to unfavorable weather conditions it was not until June 10 that I put on an extracting-super to bait the bees above. I left it on for three days, at the end of which period the bees had built out all the foundation nearly two-thirds, and had stored some honey. I then raised the extracting-super and placed a super of section boxes beneath. One day later I put a bee-escape board between and then removed the extracting-super. By the 24th of June it became necessary to put on the second super, as the first one was entirely filled, including the outside row, and three or four rows of cells in each section were capped.

The old hive, the second day after the swarm issued, was divided into two five-frame nuclei, the frames being so arranged that each nucleus had five or six queen-cells and an equal share of brood and stores. This

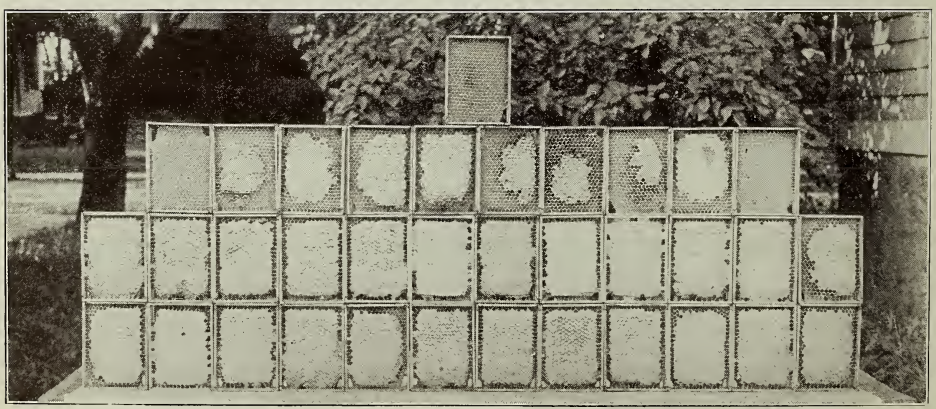


FIG. 3.—COMB HONEY PRODUCED IN ONE MONTH BY A SWARM HIVED ON COMB FOUNDATION.

FIG. 2.—W. H. HARBER CAGING HIS QUEEN-CELLS.

division was made for increase, and also prevented after-swarming. On the 24th of June these nuclei were carefully examined, and in each the five additional full sheets of foundation had been fully drawn out and filled with brood, and both hives were as strong as full colonies, each queen rivaling her mother in color, size, and prolificness. Both colonies were ready for supers at the last end of the clover-honey flow, with basswood and sweet clover following.

My knowledge of nature has increased fourfold since keeping bees, because my interest is drawn toward those plants which furnish the existence for those creatures that are born, not for evil, but for good.

Rochester, N. Y.

A BUSINESS MAN'S METHOD OF REARING QUEENS.

BY W. H. HARBER.

In my experience with queen-rearing I have used a combination of different ideas together with some plans of my own, which, so far as I am concerned at least, bring satisfactory results.

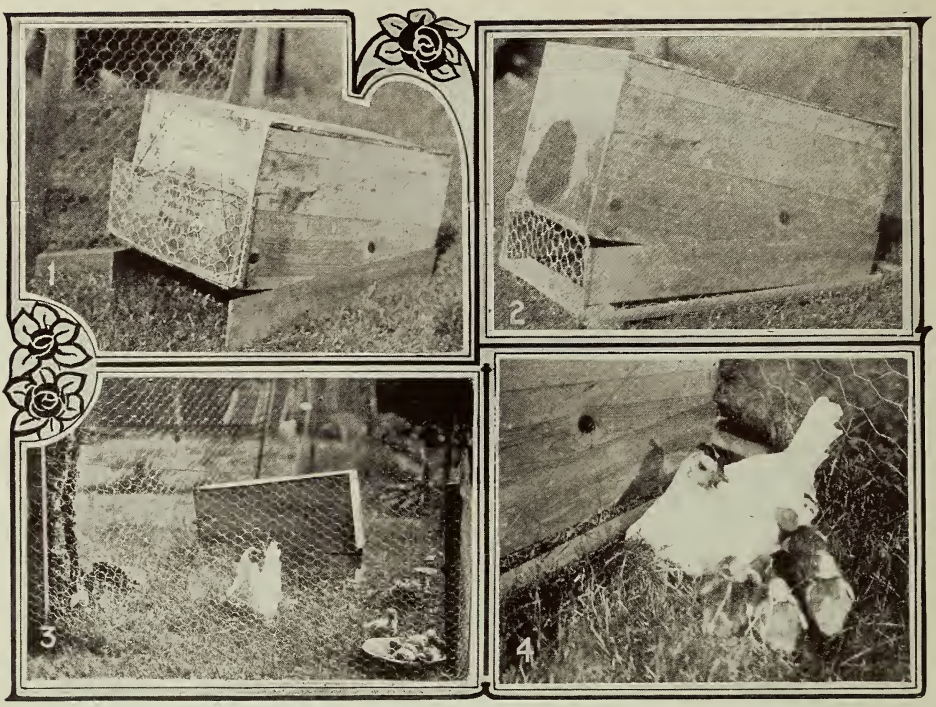
I use the artificial queen-cell cups, made by dipping a round stick in melted wax and grafting the larvæ into them, and rarely pay any attention to royal jelly or unsealed brood in the queen-rearing colony. My favorite plan is to dequeen the colony, and, after the brood is well capped, cut out the cells that have been started and insert my grafted cells. A colony thus prepared, having lots of young bees, will start from 15 to 30 cells, which cells, as shown in Fig. 2, are caged at the end of five days, and another set of grafted cells given. About three such groups of grafted cells is about all that a colony will stand successfully. I then divide up the colony into mating nuclei.

I do not make use of the very largest colonies for queen-rearing, as I prefer those moderate in strength. I select five or six combs of brood from strong colonies in order to provide young bees that will not be likely to swarm; and after the brood is nearly all hatched I start my queen-cells. I always get fine large cells that produce the very best queens.

Fig. 3 shows the honey produced in one month's time by a swarm hived on shallow frames June 22. The shallow frames were filled with full sheets of foundation, and on July 22 the super appeared full, so I placed a shallow extracting-super under it. The bees immediately stopped work in the sections, so I removed them, as the honey-flow had become very light, and I wanted the bees to store enough for winter.

The unsealed sections were practically full of honey; and if the flow had lasted just a little longer they would have been entirely finished.

Rochester, N. Y.



A. I. ROOT'S "SIMPLICITY" HEN'S NEST, BROODER COOP, AND COLONY-HOUSE; ALSO A GLIMPSE OF HIS DUCKLINGS AND THEIR MOTHER. SEE POULTRY DEPARTMENT.

BEE-KEEPING IN FLORIDA.

Some of the Difficulties.

BY E. G. BALDWIN.

Continued from last issue.

Of course, robbing and moth-millers are two nuisances that annoy even the best of bee-men, north as well as south. The difference is this: Here our summers are about twice as long as in the North, and we therefore have twice as much chance to suffer from these two difficulties. The danger from robbing, and moth alike, is largely remediable by careful handling of honey and combs. Only the careless bee-keeper need suffer very extensively; but a little negligence will tell far more quickly and more disastrously here than north. It is *impossible* to keep empty combs out of the hives for two weeks, in warm weather, in Florida, without adequate protection. Such protection is best found in tight tiers of hives with an empty hive-body on top, all joints wrapped with felt or paper, and the top super holding a pint of exposed bisulphide of carbon—the hives, of course, to be filled with empty combs, and a hive-cover over all. The bisulphide must be repeated every two weeks for the first month; then, if kept tightly closed, once a month will suffice. But woe betide the apiarist who forgets his removed combs for a month or two immediately after taking off. I have never seen anywhere else such tremendous onslaughts on combs and even frames as are here made by the moth when combs are left exposed. A careless bee-man near me a year ago extracted ten hive-bodies of full-depth frames, and, when done, set the whole lot inside the honey-shed, and—forgot them! When I went to the lot, in the following spring, the sight of the interiors was appalling. Not only was every comb eaten to a frazzle; not only every frame bored and punctured to a depth of an inch in many instances by the gnawing larvæ in their efforts to locate in a safe place with their cocoon-spinning, but the inside surface of every hive-body was layered half an inch deep with cocoons—a literal layer of them, tough and heavy as leather, so that the sheets of them could be peeled off, with effort, like a piece of rawhide. This is no exaggeration. I had seen the work of moth-millers, but this was beyond any thing I had even dreamed was possible from those soft, shy little millers that flit away from your hand in such a timorous, retiring way! Truly they love darkness because their deeds are evil. So difficult is it to keep empty combs off the hives that I have tried to keep them on the colonies as long as possible and remove them only when cold weather in early winter comes on. I am now trying the

plan of leaving them on, in extra bodies or supers, all winter; but *under* the hive-bodies containing the queen, and brood (if any). In the spring the position will be reversed.

FOUL BROOD.

With the long array of pests to assail the dauntless bee-man here, there is one thing for which he can be devoutly thankful. I refer to the absence of foul brood. There is no foul brood in Florida now, nor has there ever been to any extent. I base this assertion on State-wide inquiry, travel, and examination. Several years ago a little touch of it crept over the Alabama line, in West Florida, that has since disappeared entirely.

About twelve years ago there was a scare of it in the Hillsborough and Indian River districts, on the East Coast, that soon disappeared in and of itself. It may not have been genuine foul brood. The disease was not so well defined and known then as now, thanks to our excellent bee journals and manuals—yes, and our Federal and State aid. Not many years ago also, it was feared that it had made its appearance on the southwest coast. But none of the specimens sent to Washington showed unmistakable proofs of the disease—no clear case of it. Dr. Phillips, of the Bureau of Entomology, in speaking of it in a conversation had with him at the recent State meeting of Pennsylvania bee-keepers, in Philadelphia, said he could not say there was any case of the disease in Florida. I do not know how to account for its absence unless it be that fewer queens and bees, relatively, are shipped *into* the State than north, and more, relatively, are shipped *out* of the State. However, this is only a conjecture. The fact is, all the same, one to be thankful for.

One can not close an account of the difficulties of bee-men here without some allusion to the high tariffs levied on all transportation within the State. Formerly rates were atrocious. Ten years ago railroad rates were five cents a mile for a first-class ticket. Freight was almost prohibitive in price. The service a decade ago was also very poor. I read in a copy of *The Irrigator* for Jan., 1895, this telling notice from the pen of Mr. W. S. Hart:

"Transportation charges from Jacksonville to the North are quite reasonable; but further south in the State they are mostly excessive. *It is hoped that this drawback will soon be remedied.*" (Italics mine.) And in a penciled note, under the above, dated Jan. 14, 1898, he adds: "It has been to some extent."

To-day, thirteen years after the above was printed, conditions are greatly improved, though there is still room for vast betterment. Only three trunk lines reach down into the heart of the peninsula; but all the coasts, and large portions of the near-coast lands, are accessible by water through the many streams, rivers, and bays that lie a short distance inland. The St. Johns River brings all towns along its course in easy reach of New York, Philadelphia, and Boston, with reasonable freight rates. By it one can ship to either place named, from the central part of Florida, for the following schedule of prices (all-water route):

1st class, $1.38 per cwt.; 2d class, 89 cts. per cwt.; 3d class, 76 cts. per cwt.; 4th class, 59 cts. per cwt.; 5th class, 47 cts. per cwt.; 6th class, 38 cts. per cwt.

By rail, all the way, rates are somewhat higher. Express is still high. The rate for not over 50 lbs. from DeLand to Philadelphia is $2.50; not over 20 lbs. is $1.40, etc. A freight-car from DeLand to Punta Gorda (both in Florida) about 275 miles, costs today $114, though a car from Kansas to this place costs only $145.00 The further south the more costly, seems to be the general rule. But already the two-cent fare for first-class tickets is in vogue over Florida by purchase of non-interchangeable 1000-mile tickets. Freight rates are feeling the tug of popular sentiment and railroad commission's efforts. It can safely be said that, in Central Florida, exorbitant rates need be the dread of no one henceforth.

After a careful weighing of all the difficulties that hedge in the path of apicultural achievement in Florida, I wonder if the readers of GLEANINGS will think that "any Tom, Dick, or Harry" could make a *success* of bee-keeping here just because it is a warm climate.

De Land, Fla.

To be continued.

SORGHUM VS. REFINED SUGAR FOR BEES.

Molasses Safe if Soda is Added.

BY JOHN W. LOWRY.

In GLEANINGS for March 15, page 185, Mr. J. R. Bryant, of North Carolina, wants information on feeding molasses to bees. I want to sav for the benefit of others, as well as for Mr. Bryant, that I have been feeding home-made molasses—that is, sorghum, and also the "Louisiana" cane syrup, for twenty years, without any bad results, and that without the addition of sugar. I do not feed molasses in preference to sugar syrup. I use it as a matter of economy when I happen to have a surplus of it on hand. I consider syrup made of granulated sugar the best manufactured bee-food extant.

In feeding this molasses I always reboil, take off the scum, or strain; and while still hot I add one teaspoonful of baking soda for every quart of molasses. The reboiling and soda destroy all acidity or sourness, and make the molasses perfectly safe; and it can be fed to the bees at any time of the year. I have fed molasses treated in this way to bees in the fall for winter stores, and they wintered well. But I have seen large numbers of bees die as a result of the use of sour molasses.

Buenavista, Texas.

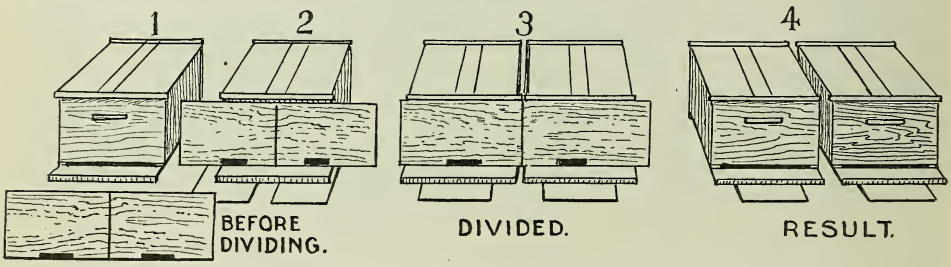
Heads of Grain

from Different Fields

A Simple Plan for Dividing in the Spring.

For a few years I have been dabbling in bee-keeping, and have succeeded in getting some very large yields of comb honey. My yield last summer was the largest I have ever had, and averaged 160 lbs. per colony from eight colonies, spring count. I divide my colonies as early in the season as the strength of the colony will permit, and for the past four years my largest yields have come from my early divisions. A Banat-Italian cross gave me last year 250 4 x 5 x 1½ sections, 70 4 x 5 x 1⅞ sections, and stored 70 lbs. in telescope covers, after I thought the honey-flow was over, and had removed all supers. These divisions swarmed, and from the one spring count I had the above-mentioned honey crop, and from colonies with plenty of honey for winter.

For some time the problem of dividing bees equally, or, rather, of keeping them equally divided, presented the great barrier to this way of making increase. One year when I divided I left half of the colonies divided on the old stand, loaded the others on a wagon, took them about three miles from home, then in a few days returned them. This plan to keep bees from deserting nuclei I saw in GLEANINGS. This plan worked fairly well, but was altogether too much bother; and, even when brought back to the yard, many of the bees would return to the old stand. But I have solved the problem, and can now divide and keep them equally divided without removing from the yard or even keeping them closed for a few days. The accompanying sketch will explain the plan better than I can tell it.



The detachable board, having the appearance of two hive-ends, and having in it two entrances, should be placed on the hive early enough so that, by the time the colony is ready to divide, the bees will be using each entrance in about equal numbers.

Clifton, Ill. W. W. HOWARD.

[The plan you propose looks as if it might work. It might be used later in the season for colonies in pairs.—ED.]

A Swarm that Built Some Comb on a Limb; Damp Cellars; how to Make them Dry and Habitable for Bees.

Two years ago I found a swarm of bees on a limb of a small tree. They had built one piece of comb about 10 by 14 inches. I hived the bees in a box hive, which they filled half full of comb; then the bees all left. Can you tell me the cause of bees building comb on limbs? Do you think they were queenless?

Will a damp cellar hurt bees? I have a cellar that is damp; the combs are moldy this spring. Will the bees clean the combs? The thermometer at times stood at 30°. I have thought of ceiling the cellar 6 inches from the wall, and filling with sawdust. I should like to know if that would take up the dampness and make the cellar warmer.

Livingstonville, N. Y. D. A. SAWDY.

[Occasionally we find instances where a swarm of bees alighting on a limb of a tree will build comb, especially so if they remain there for 24 hours or more. Generally the comb will be no larger than a man's hand. In a very few instances swarms have been known to build three or four combs—in fact, make a general start in house-keeping; but if they are located in a northern State they will die out during winter from exposure.

We can assign no reason why bees build comb on a limb except on the theory that the swarm having come forth unexpectedly did not send out scouts. Not knowing where to go they stay where they alight. A general *furore* of swarming on the part of other bees in the same yard sometimes induces some colonies to swarm, even though they have made no preparations for it. In such cases a swarm might remain on a limb for two or three days. During that interval they may build a little comb; for unless the swarm is starved out it will take considerable honey, and this honey induces a secretion of wax scales, furnishing the bees plenty of material with which to construct comb.

There is no reason to suppose the bees you refer to were queenless. They swarmed out of the box hive in which you put them, probably, for want of stores. If there was no honey coming in they would soon run short of stores.

A cellar may be damp from two or three causes. First, there may be poor drainage; second, insufficient ventilation; third, too low a temperature. In some cases dampness is due to a combination of all three In the cellar mentioned the temperature was too low, and it is apparent that there was a lack of ventilation. Lining the cellar on the inside, as you describe, would help only as it would shut out the outside cold, and so raise the temperature. The higher the temperature the more moisture that will be held in the air.

If your cellar drainage is good, and the cellar is then too damp, provide ventilation either by opening the windows or by using a small stove (do not use oil-stoves). Connect the stovepipe to a chimney-flue, and build a light slow fire. In doing so be careful not to raise the temperature higher than 50° F. The stove will raise the temperature, and at the same time draw off the excess of moisture. In your case the 30° temperature with dampness was very bad, and you probably would not be able to winter bees successfully in such a cellar until you raised the temperature and removed the excess of moisture. Dampness is not necessarily bad if the temperature is high enough, but low temperature and dampness are either fatal to the colony or leave it so weak from dysentery as to make it practically worthless.—ED.]

Putting Empty Supers Under or Above Partly Filled Sections; Putting on Partly Filled Sections to Supply Stores in Spring

I have read several articles in favor of putting supers under one already on. I tried this in 1909, and every time the bees would work in the empty super and leave unfinished the one partly filled. So in 1910 I tried putting the empty one on top, and it worked very well, for the bees finished the lower one and then went on top; and when the top one was about half full I reversed them, putting an escape between. Of course, sometimes there were a few sections that were not quite finished; but I always put them in the next super.

For spring, would it be a good plan to use early a plenty of rye or pea meal for pollen, and then put on supers having 12 sections filled with honey and 12 empty, so as to be sure that the bees would have plenty of stores? If they should need the sections

of honey it would do no harm, for they would fill the empty sections, and then all could be taken off again. I have not yet tried this, but desire to know how it would work.

Goodland, Ind., Feb. 8. JO. NAFZIGER.

[The question of putting an empty super above or below one partly filled depends entirely on conditions; as, for example, the strength of the colony, the strength of the honey-flow, and whether the season is well on or near its close. In some cases it is better to put the empties on top. Unless the colony is very strong and the honey-flow good, extra supers should be put above rather than below; and even if the colony is strong it is better to put the empty on top when the season is near its close. At the beginning of a strong flow, and with a powerful colony, we advise putting the empty under the half-filled super already on the hive.

We would not advise your scheme of putting on supers in the spring with half the sections filled with honey and the other half empty. Better by far give the necessary stores by inserting frames of sealed honey or by feeding. By your plan the empty sections will become badly soiled before the bees get ready to put honey in them during the honey-flow. There is no objection to feeding back from sections that are partly filled or otherwise undesirable, of the previous season.—ED.]

Does the Presence of Comb Interfere with the Introduction of a Queen?

After reading your article, p. 49, Jan. 15, 1910, entitled "Shipping Bees in Pound Packages Without Combs," it occurred to me that you probably had forgotten the teachings of Swarthmore when you said, page 52, that it is the absence of queen brood and *comb* that causes the bees to accept a strange queen—italics mine.

Some years ago I introduced a number of queens, or, rather, made increase by shaking bees into a prepared hive that contained at least one comb of honey but no brood, shutting them up for six hours, then running a laying queen into the hive. While I tried only about a dozen I didn't lose any; and if I remember correctly I took all the bees from one hive to make each new swarm, or, in other words, there was no mixing of bees from different colonies.

One of the first colonies I found this way swarmed out the day I set it out. After that, when setting them out after the queens had been in the hives for 48 hours I gave each one a frame of young brood and had no more trouble with their swarming out. So I think your article is misleading in placing as much stress on the absence of *comb* as of queen and brood.

Erma, N. J., April 1. F. H. FOSTER.

[It is our opinion, based on experience covering many years of practical work in putting up bees by the pound, that the absence of combs as well as of brood is an important factor in the introduction of queens. When bees are put into a wire-cloth cage or box without brood, comb, or queen their colony spirit is utterly broken. Their condition is so hopeless and forlorn—that is to say, so abnormal—that they "do not care whether school keeps or not." Now, then, if those same bees be given a comb or combs, even though there is no brood in them, their condition begins to approach the normal, and the colony spirit begins to show evidence of asserting itself. While we have no doubt that you could introduce queens to bees that were queenless but had broodless combs, yet that fact on a small scale would not prove that the presence or absence of comb was an unimportant factor. Do not lose sight of the fact that the chances for successful introduction as described in GLEANINGS, p. 49 of last year, are very greatly enhanced by making the conditions surrounding the bees as nearly abnormal as possible.—ED.]

The Care of Newly Hatched Queens.

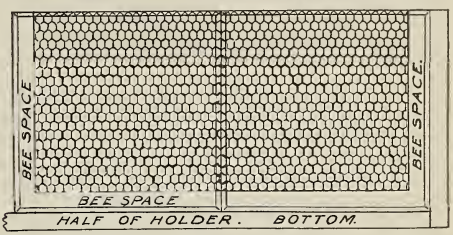
What shall I do with queens from the time they are first hatched until I need them? I shall have seven more queens than I shall have places for, very soon, but shall need them later. How shall I keep them? How long can they be kept from the colony?

Bakersfield, Cal., April 7. R. L. MOBLEY.

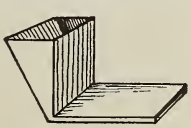
[We are afraid you will find it a difficult matter to keep extra queens on hand that you have no use for unless you form nuclei, and you will have to have pretty good-sized nuclei too. Queens kept in cages inside a hive are often not well cared for; and queens kept for too long a time in very small nuclei are liable to swarm out if there is not enough cell room for eggs. You could keep surplus queens a few days in the regular mailing-cages, for the candy in the cages will supply the food just as it does on the journey; but you must remember that, the longer the queen is away from the bees, the worse it is for that queen; furthermore, when the queen is finally mailed the cage should be supplied with fresh candy.—ED.]

Split Sections in Open-top Holders.

The illustration represents my method of using foundation 3⅞ x 7⅞ (a piece 3⅞ x 15¾ cut in two) in 4¼ split sections in place of the regular size furnished for the same. I have no buckling; there is less gnawing by the bees; a saving in foundation, and, if desired, the sections may be split on only two sides, thereby leaving them stronger. I use the ordinary open-top section-holders with solid bottoms.



I first place the sections and fences in position in the super. I use the extra-thin super foundation, and there is plenty of friction to hold it in place till all are firmly keyed up with springs or otherwise. If using sections split on only two sides it might be necessary to leave the foundation projecting a little on top, and touch the edge with a warm iron.



For years I have fed my colonies successfully by pouring syrup in at the entrance with the flat funnel shown. I tip up the fronts of the hives so the syrup will not run out; and, as all my bottom-boards are paraffined, there is no leakage.

DELLON D. SMITH.

Wyoming, N. Y.

[Pouring syrup into the bottom-board after the front end of the hive is lifted up a little is perfectly feasible provided the bottom-boards are old enough to be covered over with bee-glue; otherwise the syrup will leak and cause robbing. Before using bottom-boards as feeders it would be well to inspect them carefully; and any that show any place where they might leak should be closed up with a mixture of beeswax and rosin.—ED.]

Why did the Swarm Return to the Old Hive?

Being a GLEANINGS reader I take the liberty of asking a question. Why do bees swarm and return to the hive whence they came? Monday afternoon (May 1) I had a swarm come forth, and, after circling a while, it settled on the old stand and entered. To-day, May 3, this swarm did the same thing. How do you account for these strange proceedings?

Cornerstone, Ark. S. W. BOSWELL, JR.

[The probabilities are that the queen was not able to follow the swarm, either because her wings were defective or because they had been clipped. As a general thing a swarm will not return to its old hive if the queen is with them.—ED.]

Florida Drouths.

I should like to tell Mr. E. R. Root that some three years ago on the Pinellas Peninsula we had a drouth which lasted about ten months; also that, in a long and varied experience, I have never seen a worse country for a poor white workingman than Florida.

Ruskin, Fla. H. J. NEWMAN.

Our Homes

By A. I. ROOT

Righteousness exalteth a nation: but sin is a reproach to any people.—PROV. 14:34.

May God be praised for Ray Stannard Baker; and may he be praised again that this man who has not been afraid to rebuke sin in high places has turned his attention to the study of the liquor-traffic. We clip the following from the *Union Signal* of April 27:

In his study of the liquor-traffic in a modern American city, entitled "The Thin Crust of Civilization," appearing in *The American Magazine*, Ray Stannard Baker thus characterizes the folly and the futility of our American civilization in its treatment of the saloon evil. While he uses as the subject of his study the town of Newark, Ohio, where was perpetrated last July the awful tragedy involving the death of Carl Etherington in an effort to enforce the law, he well says that, in thus describing Newark, he has described also the typical American town—indeed, has described the essential characteristics of our modern prosperous, intelligent, materialistic American civilization.

Below is a quotation from his talk, taken from the *American Magazine:*

THE THIN CRUST OF CIVILIZATION.

In 1908, just before the local-option election, Newark had over eighty saloons. Think of it—in a town of less than 25,000 people! In other words, it had one saloon for every sixty or seventy adult men.

Think further what this meant to Newark. With the best intentions in the world, but with a plentiful lack of imagination, the people of Ohio had sought to check the evils of the saloon, which they had begun to see so clearly around them, by the easy money method—by taxation. Each saloon was forced to pay $1000 into the public funds.

What was the result? Why, it made the poor devils of saloon-keepers scratch harder than ever; for a saloon-keeper is a human being who has to eat three meals a day, wear clothes, and often support a family and a home.

Think, then, what his problem was. First, he had to sell enough beer and whisky in a year to pay the $1000 tax; after that he had to sell enough more to pay his rent and his other taxes, if any. He had to pay the inevitable and often enormous profits to the big brewers who stood behind him—all this before he could make a penny for himself. Is it any wonder that he had to push his business? Is it any wonder that he began to break laws right and left in order to increase his sales? A man must live!

It became necessary, then, for saloon-keepers at all hazards to stimulate trade. They must not only keep all the old drinkers and induce them to buy more liquor and become more drunken, but they must get in plenty of fresh young clients—fresh young boys from the schools and factories.

DRUNKEN SCHOOLBOYS.

"You have no idea," wrote Supt. Simpkins, of the Newark schools, on Nov. 30, 1908, just before the local-option election, "How difficult it is to raise a girl or boy in Newark! At every turn, day or night, he faces one of the eighty saloons. Great signs stretch across whole buildings, or shine out in electric lights from the roofs. Is it any wonder he is caught? Only a few nights ago I saw schoolboys drunk behind one of the school buildings. . . . . If I dared tell you all I know of some of the doings of the young men in this city, some of them yet in school, you would not believe me."

What a farce it all is! Spend thousands yearly in schools, boast about enlightenment, and turn boys and girls loose for amusement in a town infested with eighty saloons and thirty or forty houses of prostitution! There were half a dozen or more schools in Newark, sixteen churches, one feebly supported Young Men's Christian Association building, no playgrounds, no library building at all, and—*eighty saloons* occupying the best business sites in town, and working day and night!

When I saw those young boys in jail (the young fellows who participated in the Newark tragedy) I thought to myself that they were as truly the victims of the civic and moral indifference of Newark as was young Etherington last July. What earthly chance had they? A little smattering of learning in the school, and this sort of immoral teaching in the greater school of life!

Were these boys, then, to blame? Or was the town to blame? the business men who supported the lawless saloons and helped elect the lawless mayors? the preachers who placed profits above humanity—were not these to blame?

I wish the whole United States of America could read the above again and again. I wish especially that the fathers and mothers would read it; and last, but not least, the people generally who vote on the question of wet or dry. How is it possible that, with facts like the above before our American people, any voter, no matter how stupid, should vote to have the open saloon?

And now, friends, if you will excuse the sudden "jolt," I want to talk about something else. I have sometimes felt that most of us, if not all of us, especially during the last few days, are getting into a habit of severe criticism. We criticise the grafters, we criticise the government of the United States, and we criticise the Postoffice Department; and perhaps this is all right; but in our vehement criticisms let us not forget the good and *commendable* things that our government is doing. I suppose what I am going to talk about now should come under the head of High-pressure Gardening, or, perhaps, "High-pressure *Farming*." Ray Stannard Baker, in the above, has put in a tremendous plea for the boys and girls of America—for the "fresh young boys from the schools and factories," as he terms it. And now I want to call your attention to a most glorious work that has been conducted and carried on by our government while many of us knew but little or nothing about it. I allude to the "Corn Clubs," or "Boys' Demonstration Work." For some reason or other, I do not know just why, the work seems to have been started about 1904 in some of our *Southern States*. In 1909, 10,543 boys were enrolled. In 1910 (last summer), the number had increased to 46,225. Each boy had an acre of ground. The general government not only furnished him printed instructions clear up to date for growing corn, but experts in that line were sent around *among* the boys. If you write to the Department of Agriculture you can get a bulletin, or two bulletins, describing this work. One of these gives a picture of a class of boys out in the cornfield, with a teacher in the midst of them. That picture alone is an object-lesson. Oh, what a contrast when you come to look in the bright faces of these pure young boys, attired in their farming clothes, with the beautiful green corn as a background! By the way, I wonder if there is any other plant in the world that makes a more rapid growth than Indian corn when all the environments are favorable to its growth. Last July, when I took that trip from Ohio to Florida and back

again I told you how pained I was to see the hundreds and *thousands* of *poor* cornfields with only here and there a good one. Well, these boys (thank God there are already between forty and fifty thousand of them) are going to redeem the cornfields. They are not only, through God's providence, going to make two blades of grass grow where only one blade grew before, but they are going to grow ten bushels of corn, and in some cases toward a hundred, where only one bushel grew before; or, if you choose, where nothing of *any* value grew before. They are outstripping their fathers, with their acres of corn grown under the government instruction, and startling not only neighbors, but people for miles around. They are showing the possibilities of "high-pressure" agriculture. Kind Uncle Samuel is offering these bright boys prizes—a prize to every one who produces 75 bushels or more of corn on his acre. On page 32 of the bulletin I have mentioned is a table. Our government offered, among other prizes, a free trip to Washington, D. C., and back again, all expenses paid. Fifteen boys from as many States took in this trip; and the table I have mentioned gives you briefly some of the particulars in regard to their great corn yields. The lowest was 83¾ bushels per acre, while the highest was (now do not say you do not believe it) 228¾ bushels. Jerry Moore, of Winona, S. C., was the boy who did this. The table tells us the ground was plowed about a foot deep. The kind of corn planted was called the Prolific. The distance between the rows was 3½ feet, and the stalks in the rows were 6 inches apart. There were 24,000 stalks on the acre. It was cultivated 11 times—twice as many times as most of the other boys cultivated theirs. Joseph Stone, of Center, Ga., raised over 100 bushels on yellow clay soil, and he was only 11 years of age. John Williams, of Tuscaloosa, Ala., made 83¾ bushels on his acre, on land that yielded only 12 bushels to the acre four years ago. When these 15 boys visited the White House, President Taft gave them a little talk, and I am going to copy it.

WHAT THE PRESIDENT SAID, AND WHAT THE BOYS SAID.

President Taft singled out one of the smallest boys during the visit at the White House, and asked him if he selected the best acre on his father's farm. The boy replied that he did not. The next question was, "Will you take another acre next year?" The boy replied, "I have already selected it and plowed it." The President then asked, "Do you think you can do as well next year?" The reply was prompt, "I think I can do better." These answers, in such a presence, were excellent for a 12-year-old boy who had not been far from home before.

Below is what Secretary Wilson said to the 15 boys when they visited his office:

A visit was also made to the office of the Secretary of Agriculture, where the visitors were received with marked courtesy; their photographs were taken; large, attractive diplomas bearing the seal of the Department and the signature of the Secretary were awarded, and Secretary Wilson made them an address. The Secretary said, in substance, that, while the whole world knew of the South, that her people had made records for statesmanship, for bravery, and for great industrial progress, it had not known that boys under 16 years of age could accomplish such great feats in production as was evidenced by the boys present on that occasion.

He attributed the great increase in the production of corn in the South during 1910, in considerable measure, to the boys' corn-club work; and he emphasized the great importance of the corn crop to feed the rapidly increasing millions of this country, and especially to produce the meats necessary for the sustenance of the people.

He predicted that the South would not only supply the home demand for meat, but would become an exporter of meats and live stock.

He congratulated the boys on their excellent work, and stated that it was a great achievement for our common country, and that the publication of the results would induce many people to move into the Southern States. They had always admired the climate, and now they would find that the soil is very productive for the cereals.

He laid great stress upon the importance of keeping domestic animals, and especially of the best grade, and the production of milk, butter, and cheese.

He advised the boys not to stop with achievement in corn, but to let that be the first great step toward obtaining an education in scientific agriculture.

He emphasized the importance of industry and economy, and said that the boy who obeyed his father and mother, did the chores, and was faithful in the little things about his home was the boy that the world would depend upon to achieve greater things in later life.

He charged the boys that the world is watching their work and waiting for them; that there are plenty of openings for boys who do such splendid things.

He then called for the diplomas, and made appropriate remarks as he presented the diploma to the boy representing each State. The whole occasion was very instructive and impressive.

Now, friends, while it is true that saloons are flourishing right in the very heart and center of the government of our nation, and are at this very moment, so far as I know, permitted to flourish, it is also true that a wonderful work is being inaugurated and carried on by the public money of our nation in teaching the boys to love the farms and to keep away from the saloons; and, God helping us, these death-traps for our boys and girls, that have been running so long, will *soon* be things of the past, especially if you and I do our whole duty and hold out to the end. May God help us; and may he grant, also, that we of this United States of America, from the humblest farmer's boy clear up to the President of the United States, may recognize and ponder and consider that beautiful text we started out with—"Righteousness exalteth a nation; but sin is a reproach to any people." I heartily wish that each and every one of you who is interested, either in growing corn or growing *boys*, or *both*, would send to the Secretary of Agriculture for these two pamphlets on "boys' demonstration work."

After copying his notes, my stenographer, Mr. W. P. Root (Stenog), suggests the following paraphrase of my text as not irrelevant nor irreverent:

Corn johnnycake exalteth a nation; but corn whisky is a reproach to any people.—I. CORNTHIANS, 1:1.

I just now notice that the *Ohio Farmer* for May 6 gives quite an extended letter from this same Jerry Moore, giving full particulars in regard to the way he secured this enormous crop of corn.

It would seem from this letter that the boys of our nation are not only destined to outstrip their fathers, but they are already

teaching the fathers how to do better work to such an extent that it has been suggested that the entire corn crop of the South has been greatly increased by this "boys' corn club." Truly, as we have it in the scriptures, "A little child shall lead them." This wonderful advance in corn-growing reminds us of what Phil Sheridan is reported to have said at the close of our civil war—"The South ought to raise less hell and more cotton." This advice seems to have been followed, although it now seems to be *corn* along with old King Cotton. And may the Lord be praised, too, that this corn is not to be used for the purpose of making whisky.

In closing this corn talk let me remind you that our principal experiment stations are warning our farmers that, for some reason or other not yet apparent, the quality of the average seed corn is poorer this spring than ever before. Indeed, some of it saved on the most approved methods—that is, methods that used to be considered the best—give a germination of only about 40 per cent. Our own seed corn was kept over winter in our slatted bushel boxes hanging under the steam-pipes; and from tests we made in the greenhouse, every kernel seems to germinate perfectly.

ROTTEN EGGS AND—OTHER THINGS.

We take pleasure in copying from *Up-to-Date Farming* a little sermon. See what you think of it:

There have been several instances of the seizure of bad eggs in transit from the seller to the purchaser, and their confiscation by the national authorities. One case of this kind, growing out of the seizure of a large quantity of bad eggs in transit from St. Louis, Mo., to Peoria, Ill., was taken to the Supreme Court of the United States, where a decision was rendered in favor of the authorities, and fully justifying the seizure and confiscation of the bad eggs. Justice McKenna, in rendering the decision, said:

"The power of confiscation is certainly appropriate to the right to bar them (bad eggs) from interstate commerce, and complete the purpose, which is not to prevent merely the physical movement of adulterated articles, but the use of them, or, rather, to prevent trade in them between the States by denying to them the facilities of interstate commerce. All articles, compound or single, not intended for consumption by the producer, are designed for sale; and because they are, it is the concern of the law to have them pure."

Now, these bad eggs were seized and destroyed by the authorities of the government because their use would be harmful to the people, and the public can not but approve the decision sustaining it, and thank the Supreme Court for having rendered it. But there are other articles as harmful as bad eggs, and that the people of localities, and even States, have declared by majority vote that they will not have within their borders, but that are shipped therein with impunity, and such shipments are upheld by the government. We refer to intoxicating liquors. If the shipment of rotten eggs from one State to another can be prohibited, and such shipments confiscated and destroyed for the protection of the people, like shipments of intoxicating liquors may certainly be prohibited on precisely the same grounds, particularly where the people themselves have declared against such articles because of their harmful nature. But there is not the financial and political power behind rotten eggs that there is behind intoxicating liquors.

After reading the above I gave it a most hearty amen; and I want to add, may God be praised that our agricultural periodicals are having the conscience and courage to come out so plainly against a traffic that is a thousand times worse than rotten eggs or any thing else that is "rotten." Will other periodicals pass it along?

Poultry Department

By A. I. ROOT

MY SIMPLICITY HEN'S-NEST, BROODER, AND POULTRY-HOUSE.

Now you may not believe it, friends, but during the past winter I have made still *another* "great discovery." If it does not entirely revolutionize poultry-keeping, I am sure it will, if you put it in practice, "revolutionize" the habit of paying three or four dollars for a brooder or chicken-coop, or fifteen or twenty dollars or more for a portable colony-house or poultry-house. We will commence first with what I think I will call my "simplicity" hen's nest. To commence with, I do not like a nest in the roosting-house; and, for that matter, in a warm climate like that of Southern Florida I prefer to have it out in the open—not in any house at all. Having a nest in the barn or in the granary or other building where you keep your feed may do very well; but if the nests are to be used for hatching chickens as well as for laying eggs, I much prefer them outdoors away from the rest of the poultry as much as possible, and off by themselves. During the spring, summer, and fall months here in the North the arrangements I am about to describe will be found just as useful as down in Florida. After studying over the matter a good deal I prefer a nest in a shallow box. The size of the box depends upon the breed of fowls. For the common Leghorns I would have them about 12×15, and the sides about 5 inches high. For hatching chickens in the summer, for several reasons I prefer a box without top or bottom; but if you are likely to wish to carry the box to some different place, letting the hen, eggs, and all remain, you had better have a bottom in the box. Besides, a bottom of some sort adds to the strength of the box unless the corners are nailed very securely. Now, there is nothing new in having a hen lay eggs or hatch chickens in a shallow box. By the way, I would have the box shallow to prevent the hen breaking her eggs when she jumps into it. Well, this box with its nest needs some sort of protection or covering for several reasons. First, the average hen of any breed greatly prefers privacy. She should also be protected from the weather. While most of us have secured excellent hatches with hens out in bushes or fence-corners, unprotected from heavy rains, it is not always the case. In December I had a hen with 18 eggs nearly ready to hatch out in the bushes during a rain of about four inches. The ground was flooded, and the nest must have been pretty well soaked with water for several hours. She gave a hatch

of only about 50 per cent, when I had been getting 90 to 95 almost all winter. Had the nest been on a piece of rising ground instead of being on a dead level it would doubtless have turned out better. Well, in order to give the necessary privacy and protection we will get a good tight grocery box. These can be had at almost any country store or grocery. If you arrange beforehand for the boxes you can have them saved with the covers as well as the rest of the box. Now from the cover select two pieces wide enough so that, when nailed to the box as shown in Figs. 1 and 2 (see page 308) it will leave an opening or doorway sufficient for the hen to go in easily, and long enough so she can step over into the nest-box already described. The two boards, say 6 inches wide, are nailed at the back end of the box, flush with the top of the box. This is quickly done; and if you should wish to use the box at some future time, it is an easy matter to pull off these boards and use the box for some other purpose. I would suggest, however, right here, that you not only nail these boards on very securely, but that you clinch the nails for handling it and carrying it about; unless well nailed the box may come to pieces. Now, if there are no rats, polecats, nor possoms prowling about, your nest is completed. If, however, you have had a sitting hen and nest of chickens taken by these night prowlers, you will see why some protection is needed, such as is shown in cut No. 2. It is simply four pieces of lath nailed so as to make a frame just the size of our box as it stands on the ground. We put it on this frame covered with inch netting. I now arrange the door to be shut down nights, as shown in Fig. 2. You simply take a piece of galvanized wire and bend it in the shape of a letter U; cover it with some netting by twisting the ends of the wire netting around the large galvanized wire. Let the end of this large wire project two or three inches. This projection pushes down into the soft ground when you wish to close up the coop for the night; and I do not know of any surer way to protect your sitting hen, and hens with chickens, than to shut them up nights and let them out in the morning. This is some trouble, but I am sure it pays one to see his chickens, big and little, at least *twice* every day. With laying hens, when going out to gather the eggs we make at least three trips every day. This door to our hen's-nest is hinged to the box by driving a poultry-netting staple near each corner. When you want to open up a coop to let the hen or chickens out, just raise it up so as to release the wires that stick in the ground, and swing the door up against the top of the box, catching it over the head of a small nail. With this arrangement your poultry is not only secure during the night, but you can pick up the whole thing, poultry-netting, frame, and all, and carry the chickens anywhere; and if you buy a *large* box, the whole thing, hen and all, can be carried about.

There is a simpler way of protecting the sitting hen or hen with chicks; but on some accounts I do not like it as well. In moving the hen and chickens about, however, for different purposes, this other plan has some important advantages. It is lighter to handle, and there is less danger of the bottom getting off so as to let the chickens out. This second plan is as follows: Tack your poultry-netting with the proper staples right directly to the bottom of the coop or brooder, and have said strip of poultry-netting long enough to turn up and form the door. The spring of the netting will allow the door to open and close. When shut up for the night it is simply raised up and hooked to a couple of nails. When you let the chicks out in the morning, lay a brick across the outer edge of the netting to hold it down. This answers the purpose nicely; but if you have a sitting hen inside it is not so convenient to take charge of her. Neither is it as handy to clean out the litter and put in fresh; but if you have the whole arrangement set up on four half-bricks your poultry-house will clean itself, for the droppings will all go down through the netting. This latter arrangement is all right for hot weather. When cool, of course it should be set down on the ground, or covered with coarse litter that does not readily rattle down through the meshes of the netting.

By the way, this same arrangement makes an excellent fireless brooder. All you have to do is to take a box of the proper size for your number of chickens—25, 50, or even 100. If they are put in the box right from the incubator, cover the wire cloth well with clover chaff, and then tack a piece of burlap so as to drop down just over the backs of the chickens. With this sort of arrangement it is a convenience to have the roof removable. Nail on it a couple of cleats and simply drop it down in place. I forgot to say in the proper place that the raising-up of one end of the box gives the roof a proper slant to shed the rain. In case the boards composing the bottom of the box are not sufficiently tight, it is an easy matter to cover the whole roof with something. Neponset answers nicely, and still leaves the whole apparatus very light to carry about. Now, this box I have described answers very well for a hen and chickens even if she has fifteen or twenty, for, say, two or three weeks. Pretty soon, when there comes a warm night, you will find they need some more ventilation; and this is easily arranged by putting a block, or, a little later on, a brick under each of the front corners, raising up the wire cloth, frame and all; and if more air is still needed, put a half-brick under each of the four corners. Now, when the chicks are weaned, and want still more air, make the cover movable if it has not been done already, and block up, say, one inch all around, according to the weather and the number of chickens. After they are weaned let them still occupy their old home nights, but put in some strips of lath for them to roost on.

These strips of lath should be put on something like a little ladder that can be slipped inside of the box, resting on blocks nailed in at each corner. When people come to see your chickens you can take them out just after nightfall, raise up the cover, and see the little chaps sitting on their roosts as regular and handsome as peas in a pod. Of course they *still* keep growing, and when you find they are crowded nights, and want to stay out in the yard instead of going home, a still larger box should be fitted out in just the same way. Of course, this box will need a movable cover and some roosts a little further apart. In carrying the chickens along, from those one day old to hens ready to lay, you will want about three sizes of these simplicity poultry-houses. When I left my Florida home we had four incubator hatches in houses of this sort. The oldest were hatched in December, then January, February, and March. When I turned them over to a neighbor we just lifted up the boxes, chickens and all, after dark, and set them into his wagon. One horse easily pulled the four coops, containing about 100 chickens, the largest of them being fully half grown. I should have mentioned in the proper place, that, where you want to set a hen and protect her from being intruded on by other hens, you can make a little dooryard of one-inch poultry-netting to fasten over the doorway of the nest-box. This can be made of four lath frames like the one shown under the nest-box. Put in some wheat and corn, and a can of water wired to the frame so it can not be upset, and the hen will take care of herself very well. This same doorway of netting will keep off meddlesome cats, where you do not want to have small chickens run outside until they are a little older. The two pictures, 3 and 4, show a hen that hatched out a brood of ducks with the same arrangement.

Now, the great feature of my invention in the above is the extreme cheapness with which you can furnish convenient brooder or colony houses for a great number of chicks. If you look into the poultry-keepers' catalogs you will find that they want three or four dollars or more for an arrangement that offers no more advantages than the one I have described. You can get boxes for a few cents at almost any country store, especially if you engage them ahead, and a few minutes' work with a bundle of lath and some one-inch netting will complete the outfit.

By the way, I think I had better add right here, that, unless your boxes are very strong, you had better have corner posts, right where the door is hinged. Let this run up into the corner of the box where it can be nailed securely, then put in a little piece of lath between the corner stake and the outer board, and nail the whole securely with clinch nails. By using a large-sized box you can keep half a dozen laying hens on a small piece of ground, and yet your poultry-house all complete should not cost you more than a dollar. If you can buy good-sized boxes you might fit out a very good-looking poultry-house for half a dozen laying hens at considerably less than one dollar; and a complete Philo coop costs from twenty to twenty-five dollars. I do not mean to find any fault with his prices, and it may be well enough for you to have one of his finished houses on hand; but as your flock increases, and you begin to need more room, such a colony coop as I have mapped out will be a great convenience indeed. When I went back to my place last fall I found that my brother, J. H. Root, had made use of several coops like the above in order to furnish accommodations for the rapidly growing stock; and the credit of the idea belongs largely to him.

In describing the above I failed to mention that, with the larger sizes of houses or boxes for half-grown chickens, by having the roofs, roosts and bottoms so they will all three be removable (when it becomes necessary to move this poultry-house to some other location), you can just stand inside of the house, grasping the sides, and carry it where you choose, very easily, without needing a horse nor even an assistant to take hold of one end. This arrangement makes it an easy matter for a man (or woman too, for that matter) to care for the chickens, even to the extent of moving the houses, without calling for outside help. This idea is not original with myself. I found it either in one of the poultry-journals or agricultural papers; but I can not recall where, just now, so as to give proper credit.

"HANDSOME IS THAT HANDSOME DOES."

When I first got back to Florida my Buttercup rooster had improved in looks so much that I, in a piece of pleasantry, said I valued him at $25.00. And, by the way, a couple of roosters from the same hatch that were left here in Ohio did not anywhere approach him in size and beauty — that is, in my estimation — indicating, at least so it seemed to me, that poultry wintered in Florida, or, perhaps we should say, Buttercup Leghorns and breeds from a southern climate, develop ever so much better in the South than they do here in the cold North. This may be in this case, however, owing to the fact that my original Buttercups were hatched some time in July or August. Well, after my Buttercup rooster had been admired by multitudes of people, a gentleman who was pretty well posted on scoring fowls declared that said rooster did not come up to the "standard" *at all*. One of my young Buttercups that I had offered for a dollar he said was well worth ten or fifteen dollars; and this only indicates what I have told you before, that I am not at all versed in scoring fowls. But even if this is true I think I will transfer my $25.00 valuation to that Indian Runner duck that laid over 100 eggs without a miss. When you come to talk about beauty I have several times remarked to visitors, when my flock of four

was sailing gracefully in salt water, that, notwithstanding all that had been said about the beauty of swans, I preferred a flock of Indian Runner ducks, especially where there is one in the flock that has a record of 100 eggs without a miss. "Handsome is that handsome does," you know; and my pet duck comes in on both scores—utility and beauty. By the way, I had forgotten all along to mention that this duck came from the best pen of our old friend Kent Jennings, who, I am glad to notice, has a brief advertisement in this issue.

THE INDIAN RUNNER DUCK AND THE VALENTINE DUCK-BOOK.

Dear Brother Root:—I hope you will not take it amiss if I say that I feel that you have treated me about as you did the duck to which you gave "a bad name while she was quietly attending to business."

My chief "business" in writing "The Indian Runner Duck Book" was to clear up the much-muddled history of the Indian Runner, *and* to preserve the white-egg duck for the farmers. The *American Standard*, in affirming that the true duck is worthless, bade fair to push that duck entirely out of the country. All breeders know that changing the type of any bird is likely to destroy its most valued points, and this is peculiarly true of the Indian Runner. The original heavy-laying Runner laid a white egg. Our markets often discriminate in favor of the white egg, even against the light brown one. Much more would this be the case against a green one; and as to taking too much space on this point, it was *the one point where farmers needed warning*. It was, in fact, the foundation of the whole matter; and I have had *many* letters from farmers telling me how long they had looked for just such a book, and how exactly it just met their needs.

If you will pardon me for so saying, it seems to me that you, who know so little about ducks—on your own showing—and who, on your own showing, believe the facts only when you have proven them (as to the good laying, for instance), have hardly reached the point where you can logically set up your opinion or your experience against that of the men who raise perhaps 20,000 or 30,000 a season. These are the men who say ducklings should not get wet while downy. If you will look in the right place you will find that my book also says that they should have water so that they can not get wet in it. Young ducklings chill very easily, and wet down adds greatly to the danger of such fatalities.

Another point where, it seems to me, you fail to "play fair" is this: In the very number of your journal where my advertisement appears (a journal which has a good reputation), you charge me, who have also, I believe, a good reputation, with writing a book less valuable than it should be. You do this because you ignore the point of view from which it was written—that of the farmer who must sell market eggs; and you do it in the very number wherein my advertisement of the book appears.

We published this book ourselves, not offering it to any outside publisher at all. It cost quite a bit of money. We are paying you for advertising. We can not tell all we know in a fifty-cent book. We hope to get out a larger edition late in the year, which will tell all the things you want to know.

Finally, I feel that if you would be just, you will publish this letter in the same department wherein your comment appeared. C. S. VALENTINE.

Ridgewood, N. J., May 5.

My good friend, very likely you are right about white eggs instead of eggs having a green or bluish tint; that is, if they sell better in the market we had better have ducks that produce the white eggs; but in regard to the color of the feathers or the markings, I *do* think the poultry business all through lays too much stress on this unimportant matter. We have had the same thing in bee culture, as you may know. For years everybody wanted yellow queens and light-colored bees; but when they found that these same light-yellow bees did not produce the honey, most bee-keepers went back to the leather-colored or still darker bees, even if they were not so handsome. It is the honey we are after, with bees, and eggs that will bring a good price in the market with ducks. Of course, it *is* worth something to have them "good-looking" also, if this latter is not pushed too far. Your remarks about ducklings getting wet suggest that very likely it would do more harm up here in the North than down in Florida, where the weather is always warm, and always plenty of sunshine. In regard to changing my opinion or my report because you had an advertisement in our journal, I shall have to plead guilty, although my communication was written in Florida without my knowing you had sent us an advertisement. But I prefer to have it distinctly understood that my opinion and write-up on the Indian Runner ducks, Buckeye incubators or any thing else, are given to the public without any consideration whatever, whether the thing is advertised in our journarl or is not advertised; and if my remarks hinder the sale of your book or that of the goods of any other person, you can have the money back if you wish.

You have not, in the above, mentioned the matter of telling the sex of ducks. When you get out another edition of your book, if you will make it a little plainer about letting them go into the water, and also tell us how to distinguish the ducks from the drakes, I shall be very glad indeed to notice it,

And how about the Indian Runner ducks being non-sitters? Do they never sit at all? or do the older ducks occasionally want to sit, like our Leghorn hens and other non-sitting breeds?

BERMUDA GRASS FOR CHICKENS AND OTHER FARM STOCK IN THE SOUTH.

In deciding how to furnish our chickens with green food at the least expense I very soon struck on Bermuda grass; but many of the neighbors cautioned me about letting it get a foothold on my place, as it is a terrible pest to the market-gardener. It runs over ground and under ground; and it is, perhaps, the most persistent grower of any grass or any other plant in the South. It got through the cement floor in my automobile-house, and came out between the boards as high as my head. Where I first commenced feeding the chickens it is a perfect mat, making a soft carpet in some places almost a foot thick. The chickens keep eating it from daylight till dark; but, no matter how many there are in that yard, they do not seem to be able to keep it down. It was started in this particular yard by putting little bits of sod about as far apart as you would plant corn. But we were obliged to take the chickens off for one summer to

give it a chance. I tried starting it in other yards without moving the chickens away; but they kept biting off every green shoot as fast as it appeared, and it was not a success. Before coming away this spring our chickens were all removed from our five acres; and I suppose Wesley is now busy planting Bermuda sod all through the yard, on which the chickens can run next winter.

My attention was called to this matter of Bermuda grass by a government bulletin entitled "Suggestions for Setting Permanent Pastures, with Bermuda Grass as the Basis." If you are interested in the matter it will pay you to send for it. Address the Bureau of Plant Industry, Washington, D. C.

By the way, it would seem that Bermuda grass is something like our northern sweet clover, which has been only recently appreciated. See the following extract from the bulletin mentioned:

BERMUDA GRASS.

Bermuda grass is, without question, the most useful of the pasture grasses for all southern States. It is nutritious, a persistent grower, and delights in the hot sunny exposure of an open field. It will stand unlimited grazing by stock, holds up during severe drouth, and grows continuously until a killing frost occurs in the fall. It will do well on almost any type of soil, but is especially adapted to sandy loams and the hill lands throughout the South. On fertile lands it makes a rapid growth, attaining a height sufficient for mowing, and may be cut several times during the season. The hay from Bermuda grass has been found fully equal in food value to the best timothy. On washed soils, or on lands that are broken and would soon wash off under cultivation, no other plant has been found so valuable either for checking the erosion already made or for preventing it on sandy hill lands. Its value for preventing washes and holding lands may be illustrated from the fact that all railroads take particular care to get it set thoroughly on new embankments as soon as they are made. The same use is made of it on all new levées and other embankments where washing is likely to occur.

I do not know how far north Bermuda grass will stand freezing and thawing; but it seems to flourish finely through Mississippi and other southern States.

Health Notes

By A. I. ROOT

WELL-RIPENED HONEY, ETC.

Well, friends, although I have not had any thing to say in regard to honey for a long time, I want to take it up once more. Of late I have been rejoicing that I could eat good well-ripened honey twice a day, for breakfast and dinner, without any inconvenience. I am still eating apples, and nothing else, for supper. By the way, down in Florida, after the apples were gone that I carried from our Medina orchard, I paid *40 cents a dozen* for Oregon Ganoes. That is at the rate of 3 for a dime, as you will notice. Well, these apples are so large and fine—no wormy ones, no imperfections—that two big Ganoes make a very fair meal; and two apples costing six or seven cents is not a very expensive supper after all. When I got back here to Medina I thought that apples would be cheaper of course; but here they are getting *a nickel apiece* for these same Oregon Ganoes. By the way, where in this whole wide world is there a better chance to make money than by growing nice apples for a nickel apiece? Why, with the miles and miles of hills and mountains through Georgia, Tennessee, and Kentucky, why don't somebody take hold of it and cover these hills with apple-orchards? It is a burning shame that apples should be a dollar a peck, or even more, when they bring only a dollar a barrel or a little more during the fall and early winter. Where are our cold-storage people? Now to get back to the honey.

Just as soon as I reached the Home of the Honey-bees, Mrs. Root dispatched me for some nice well-ripened honey. I got a jarful in the honey-room where they put up little pieces of comb honey for the Pullman Car Co. Well, this honey (alfalfa), while it is as clear as crystal (*amber* crystal) it is so thick we can turn over a jarful or a tumblerful without spilling a drop. In fact, it has to be cut out of the jar with a knife—that is, during cold weather. Now, this thick honey is ever so much more wholesome, as I have proved repeatedly, and I think most people will call it ever so much more delicious, and would cheerfully pay *double price* for good well-ripened honey like this. And now comes a point that has never occurred to me before. It would make a tremendous saving in freight when shipping honey if all the useless water were evaporated out of it—yes, *worse* than useless. Thin honey, if it does not spoil by becoming sour on the surface, deteriorates to a certain extent, especially in hot weather. The thick, well-ripened honey suffers no such deterioration. It has been stated before in these columns and other bee-journals that, when candied honey is permitted to drain so as to get rid of every thing that will run out, the quality is greatly improved. That which drains off it can be used for vinegar, or sold to bakers for making honey-cakes; and if the remaining candied honey has been well drained and dried out before it is melted up, being careful about overheating, it will be very much like the thick honey we are now using on our table every day. When I questioned our people in our honey department they said they were selling this very thick alfalfa at the same price as the other. I entered a protest. Let us, each and all, get to work and produce gilt-edged honey, and then insist on having a *gilt-edged* price for it.

OF INTEREST TO BEE-KEEPERS WHO OPERATE AUTOMOBILES.

Automobile Dealer and Repairer is the name of a monthly journal said to be the only publication in the world especially devoted to the practical side of motoring. Bee-keepers who own and operate automobiles, or any of our readers who may be interested in this subject, should send to the Motor Vehicle Publishing Co., 24 Murray St., New York, for a sample copy. The yearly subscription price is $1.00; which may be sent direct or through the publishers of GLEANINGS.